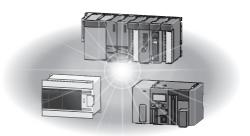


Mitsubishi Programmable Controller

MELSECQ_{series} MELSEC_{series}

MELSEC-Q/L Structured Programming Manual (Special Instructions)





(Read these precautions before using this product.)

Before using MELSEC-Q or -L series programmable controllers, please read the manuals included with each product and the relevant manuals introduced in those manuals carefully, and pay full attention to safety to handle the product correctly.

Make sure that the end users read the manuals included with each product, and keep the manuals in a safe place for future reference.

● CONDITIONS OF USE FOR THE PRODUCT●

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

REVISIONS

The manual number is written at the bottom left of the back cover.

Print date	Manual number	Revision
Jul., 2008	SH(NA)-080785ENG-A	First edition
Jan., 2009	SH(NA)-080785ENG-B	Model Addition Q00UCPU, Q01UCPU, Q10UDHCPU, Q10UDEHCPU, Q20UDHCPU, Q20UDEHCPU Addition MANUALS, Section 2.2.5, Section 5.5 Correction GENERIC TERMS AND ABBREVIATIONS IN THIS MANUAL, Section 1.1, Section 1.2, Section 2.2.5 to 2.2.7 changed to Section 2.2.6 to Section 2.2.8, Section 5.5 to Section 5.7 changed to Section 5.6 to Section 5.8
Jul., 2009	SH(NA)-080785ENG-C	Model Addition Q00JCPU, Q00CPU, Q01CPU Correction PURPOSE OF THIS MANUAL is changed to Section 1.1, GENERIC TERMS AND ABBREVIATIONS IN THIS MANUAL is changed to Section 1.2, Section 1.1 is changed to Section 1.3, Section 1.2 is changed to Section 1.4, Chapter 4, Program examples are added in Chapter 5
Jan., 2010	SH(NA)-080785ENG-D	Model Addition L02CPU, L26CPU-BT Addition CONDITIONS OF USE FOR THE PRODUCT, Section 2.3, Section 2.4, Section 2.5, Section 2.6, Chapter 8, Chapter 9 Correction MANUALS, Section 1.1, Section 1.2, Section 1.3, Section 1.4, Section 2.2, Chapter 4, Section 5.1.2, Section 5.1.3, Section 5.6.1, Section 5.6.2, Section 5.6.3, Section 5.6.4. Section 5.7.1, Section 5.7.2, Section 5.7.3, Section 5.7.4, Section 5.4.10 to Section 5.4.25 are changed to Section 5.4.9 to Section 5.4.24, Section 5.8 is changed to Section 5.5, Section 5.6 to Section 5.7 are changed to Chapter 6, Section 5.5 is changed to Chapter 7 Deletion Section 5.4.9

Print date	Manual number	Revision
Apr., 2010	SH(NA)-080785ENG-E	Model Addition Q50UDEHCPU, Q100UDEHCPU Addition
		Section 2.2.2, Section 5.2.15, Section 5.4.15, Section 5.4.16, Section 5.4.17 Correction MANUALS, Section 1.2, Section 1.4, Section 2.2.4, Chapter 4, Section 5.3.7, Section 5.4, Section 5.4.1, Section 5.4.3, Section 5.4.5, Section 5.4.6, Section
		5.4.7, Section 5.4.8, Section 5.4.13, Section 5.4.14, Section 7.1, Section 5.4.15 to Section 5.4.24 are changed to Section 5.4.18 to Section 5.4.27.
Sep., 2010	SH(NA)-080785ENG-F	AdditionSection 2.7, Section 5.4.16, Section 5.4.17, Chapter 10CorrectionMANUALS, Section 1.1, Section 1.3, Section 1.4, Section 2.1,Chapter 4, Section 5.1.2, Section 5.1.3, Section 5.4.1, Section 5.4.2, Section 5.4.4,Section 5.4.5. Section 5.4.8, Section 5.4.10, Section 5.4.12, Section 5.4.13,Section 5.4.14, Section 5.4.15, Section 5.4.18, Section 5.4.19, Section 5.4.20,Section 5.4.21, Section 5.4.22, Section 5.4.23, Section 5.4.29, Section 5.4.32,Section 2.2.2 to Section 2.2.4 are changed to Section 2.2.3 to Section 2.2.4,Section 5.2 to Section 5.4 are changed to Section 5.3 to Section 5.4,Section 5.5 is changed to Section 5.2DeletionSection 5.4.17, Section 5.4.18
Jan., 2011	SH(NA)-080785ENG-G	
Mar., 2011	SH(NA)-080785ENG-H	Correction MANUALS, Section 1.1, Section 1.4, Section 2.1, Section 2.2.3, Section 5.1.1, Section 5.1.2, Section 5.1.3, Section 5.3.5, Section 5.3.7, Section 5.3.14, Section 5.3.15, Section 5.4.1, Section 5.4.2, Section 5.4.5, Section 5.4.6, Section 5.4.8, Section 5.4.9, Section 5.4.10, Section 5.4.11, Section 5.4.12, Section 5.4.13, Section 5.4.14, Section 5.1.15, Section 5.4.18, Section 5.4.19, Section 5.4.20, Section 5.4.21, Section 5.4.28, Section 5.4.31, Section 5.4.32, Section 5.4.33, Section 7.1, Section 7.2, Section 7.5, Section 7.8, Section ,7.9

Print date	Manual number	Revision
Jul., 2011	SH(NA)-080785ENG-I	Model Addition L02CPU-P, L26CPU-PBT Correction Section 1.2, Section 1.4, Chapter 4, Section 5.3.2, Section 5.3.4, Section 5.3.15, Section 5.4.16, Section 5.4.17, Section 5.4.18, Section 5.4.21, Section 5.4.22, Section 5.4.23, Section 5.4.24, Section 5.4.25, Section 5.4.26, Section 5.4.27, Section 5.4.29, Section 5.4.32, Section 5.4.34, Section 7.1, Section 7.2, Section 8.1.5, Section 10.1.1, Section 10.1.2
Feb., 2013	SH(NA)-080785ENG-J	Descriptions concerning the model additions of a Process CPU, Redundant CPU, Universal model QCPU, and LCPU Model Addition Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU, Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU, L02SCPU, L06CPU, L26CPU
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Japanese manual version SH-080738-P

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INTRODUCTION

Thank you for purchasing the Mitsubishi MELSEC-Q or -L series programmable controllers.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the programming specifications to handle the product correctly.

When applying the program examples introduced in this manual to the actual system, ensure the applicability and confirm that it will not cause system control problems.

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MANUALS

The manuals related to this product are listed below.

Order each manual as needed, referring to the following lists.

(1) Structured programming

Manual name	Manual number (model code)
MELSEC-Q/L/F Structured Programming Manual (Fundamentals) Methods and languages for structured programming (Sold separately)	SH-080782ENG (13JW06)
MELSEC-Q/L Structured Programming Manual (Common Instructions) Specifications and functions of common instructions, such as sequence instructions, basic instructions, and application instructions, that can be used in structured programs (Sold separately)	SH-080783ENG (13JW07)
MELSEC-Q/L Structured Programming Manual (Application Functions) Specifications and functions of application functions that can be used in structured programs (Sold separately)	SH-080784ENG (13JW08)

(2) Operation of GX Works2

Manual name	Manual number (model code)
GX Works2 Version 1 Operating Manual (Common)	
System configuration, parameter settings, and online operations of GX Works2, which are common to Simple projects and	SH-080779ENG
Structured projects	(13JU63)
(Sold separately)	
GX Works2 Version 1 Operating Manual (Structured Project)	SH-080781ENG
Operations, such as programming and monitoring in Structured projects, of GX Works2	(13JU65)
(Sold separately)	(133003)
GX Works2 Beginner's Manual (Structured Project)	
Basic operations, such as programming, editing, and monitoring in Structured projects, of GX Works2. This manual is	SH-080788ENG
intended for first-time users of GX Works2.	(13JZ23)
(Sold separately)	

Operating manuals in PDF format are stored on the CD-ROM of the software package. Printed manuals are sold separately. To order manuals, please provide the manual number (model code) listed in the table above.

(3) Detailed specifications of instructions

Analog instruction

Manual name	Manual number (model code)
Analog-Digital Converter Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64AD, Q68ADV, and Q68ADI	SH-080055 (13JR03)
(Sold separately)	
Channel Isolated High Resolution Analog-Digital Converter Module / Channel Isolated High Resolution Analog-Digital	
Converter Module (With Signal Conditioning Function) User's Manual	SH-080277
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64AD-GH and Q62AD-DGH	(13JR51)
(Sold separately)	
Channel Isolated Analog-Digital Converter Module/Channel Isolated Analog-Digital Converter Module (With Signal	
Conditioning Function) User's Manual	SH-080647ENG
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68AD-G and Q66AD-DG	(13JR96)
(Sold separately)	
MELSEC-Q High Speed Analog-Digital Converter Module User's Manual	SH-080987ENG
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64ADH (Sold separately)	(13JZ59)
IELSEC-Q High Speed Digital-Analog Converter Module User's Manual	SH-081101ENG
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64DAH	(13JZ71)
(Sold separately)	
Digital-Analog Converter Module User's Manual	011 000054
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DAN, Q64DAN, Q68DAVN, and Q68DAIN	SH-080054 (13JR02)
(Sold separately)	(155R02)
Channel Isolated Digital-Analog Converter Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DA-FG	SH-080281E
(Sold separately)	(13JR52)
Channel Isolated Digital-Analog Converter Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q66DA-G (Sold separately)	SH-080648ENG (13JR97)
RTD Input Module Channel Isolated RTD Input Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64RD and	SH-080142
264RD-G	(13JR31)
(Sold separately)	
Thermocouple Input Module Channel Isolated Thermocouple/Micro Voltage Input Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64TD and	SH-080141
Q64TDV-GH	(13JR30)
(Sold separately)	
Channel Isolated Thermocouple Input Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68TD-G-H01/	SH-080795ENG
268TD-G-H02	(13JZ26)
(Sold separately)	(100220)
Channel Isolated RTD Input Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68RD3-G	SH-080722ENG
(Sold separately)	(13JZ06)
Q61LD Load Cell Input Module User's Manual	SH-080821ENG
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q61LD (Sold separately)	(13JZ31)
IELSEC-Q Current Transformer Input Module User's Manual	SH-081033ENG
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68CT	(13JZ66)
(Sold separately)	
(Sold separately) MELSEC-L Analog-Digital Converter Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the analog-digital converter module	SH-080899ENG (13JZ42)

Manual name	Manual number (model code)
MELSEC-L Dual Channel Isolated High Resolution Analog-Digital Converter Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the L60AD4-2GH (Sold separately)	SH-081103ENG (13JZ72)
MELSEC-L Digital-Analog Converter Module User's Manual System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the digital-analog converter module	SH-080900ENG (13JZ43)
(Sold separately)	

Positioning instruction

Manual name	Manual number (model code)
Type QD75P/QD75D Positioning Module User's Manual (Details)	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the QD75P1N/	SH-080058
QD75P2N/QD75P4N/QD75D1N/QD75D2N/QD75D4N/QD75P1/QD75P2/QD75P4/QD75D1/QD75D2/QD75D4	(13JR09)
(Sold separately)	
Type QD75M Positioning Module User's Manual (Details)	
System configuration, performance specifications, functions, handling, procedures before operation, and troubleshooting of	IB-0300062
the QD75M1/QD75M2/QD75M4	(1XB752)
(Sold separately)	
Type QD75MH Positioning Module User's Manual (Details)	
System configuration, performance specifications, functions, handling, procedures before operation, and troubleshooting of	IB-0300117
the QD75MH1/QD75MH2/QD75MH4	(1XB917)
(Sold separately)	
MELSEC-L LD75P/LD75D Positioning Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the LD75P1/LD75P2/	SH-080911ENG
LD75P4/LD75D1/LD75D2/LD75D4	(13JZ46)
(Sold separately)	

Serial communication

Manual name	Manual number (model code)
Q Corresponding Serial Communication Module User's Manual (Basic)	
The overview for use of the module, applicable system configuration, specifications, procedures before operation,	SH-080006
fundamental data communication with external devices, maintenance, inspection, and troubleshooting	(13JL86)
(Sold separately)	
MELSEC-L Serial Communication Module User's Manual (Basic)	
The overview for use of the module, applicable system configuration, specifications, procedures before operation,	SH-080894ENG
fundamental data communication with external devices, maintenance, inspection, and troubleshooting	(13JZ40)
(Sold separately)	
MELSEC-Q/L Serial Communication Module User's Manual (Application)	
The specifications and usage of special functions of the module, settings for special functions, and data communication with	SH-080007
external devices	(13JL87)
(Sold separately)	

Network dedicated instruction

Manual name	Manual number (model code)
MELSEC-Q CC-Link System Master/Local Module User's Manual	SH-080394E
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the QJ61BT11N	(13JR64)
(Sold separately)	
MELSEC-L CC-Link System Master/Local Module User's Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the built-in CC-Link and	SH-080895ENG
CC-Link system master/local modules	(13JZ41)
(Sold separately)	
CC-Link IE Controller Network Reference Manual	
System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the CC-Link IE	SH-080668ENG
Controller Network	(13JV16)
(Sold separately)	
MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual	
The specifications, procedures before operation, system configuration, installation, settings, functions, programming, and	SH-080917ENG
troubleshooting of the CC-Link IE Field Network and the CC-Link IE Field Network master/local module	(13JZ47)
(Sold separately)	
MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual	
The specifications, procedures before operation, system configuration, installation, settings, functions, programming, and	SH-080972ENG
troubleshooting of the CC-Link IE Field Network and the CC-Link IE Field Network master/local module	(13JZ54)
(Sold separately) Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)	
The specifications, settings and procedures before operation, parameter setting, programming, and troubleshooting of the	SH-080049
MELSECNET/H PLC-to-PLC network system	(13JF92)
(Sold separately)	(1331.92)
Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)	
System configuration, performance specifications, and programming of the MELSECNET/H network system (remote I/O	SH-080124
network)	(13JF96)
(Sold separately)	(1001 00)
Q Corresponding Ethernet Interface Module User's Manual (Basic)	
The specifications of the Ethernet module, data communication procedure with external devices, line connection (open/close),	SH-080009
fixed buffer communication, random access buffer communication, and troubleshooting	(13JL88)
(Sold separately)	· · ·
MELSEC-L Ethernet Interface Module User's Manual (Basic)	
The specifications of the Ethernet module, data communication procedure with external devices, line connection (open/close),	SH-081105ENG
fixed buffer communication, random access buffer communication, and troubleshooting	(13JZ73)
(Sold separately)	
MELSEC-Q/L Ethernet Interface Module User's Manual (Application)	
The e-mail function of the Ethernet module, programmable controller CPU status monitoring, communication function using	SH 000040
the MELSECNET/H or MELSECNET/10 as a relay station, communication with data link instructions, and the use of file	SH-080010
transfer (FTP server) function	(13JL89)
(Sold separately)	

• PID control instruction

Manual name	Manual number (model code)
MELSEC-Q/L/QnA Programming Manual (PID Control Instructions) The dedicated instructions for PID control	SH-080040
	parately) (13JF59)

Socket communication function instruction

Manual name		Manual number (model code)
QnUCPU User's Manual (Communication via Built-in Ethernet Port) Functions for the communication via built-in Ethernet port of the CPU module	(Sold separately)	SH-080811 (13JZ29)
MELSEC-L CPU Module User's Manual (Built-In Ethernet Function) The built-in Ethernet function of the CPU module	(Sold separately)	SH-080891ENG (13JZ37)

• Built-in I/O function instruction

Manual name	Manual number (model code)
MELSEC-L CPU Module User's Manual (Built-In I/O Function)	
The general-purpose I/O function, interrupt input function, pulse catch function, positioning function, and high-speed counter	SH-080892ENG
function of the CPU module	(13JZ38)
(Sold separately)	

Data logging function instruction

Manual name		Manual number (model code)
QnUDVCPU/LCPU User's Manual (Data Logging Function) Specifications of the data logging function, and operating method of the LCPU logging configuration tool	(Sold separately)	SH-080893ENG (13JZ39)

SFC control Instruction

Manual name	Manual number (model code)
MELSEC-Q/L/QnA Programming Manual (SFC)	SH-080041ENG
The programming methods required to create SFC program, specifications and functions	
(Sold separate	(13JF60)



OVERVIEW

1.1	Purpose of This Manual	1-2
1.2	Terms	1-5
1.3	Explanation Content in This Manual	1-6
1.4	Modules and Versions Applicable to Instructions	1-8

This manual explains the instructions for the network module, intelligent function module, PID control, socket communication function, built-in I/O function, and data logging function among common instructions and special instructions necessary for creating programs using the structured programming technique.

Manuals for reference are listed in the following table according to their purpose.

For information such as the contents and number of each manual, refer to the list of 'Related manuals'.

		GX Works2		/orks2 r's Manual			2 Version 1 ng Manual	
	Purpose	Installation Instructions	Simple Project	Structured Project	Common	Simple Project	Structured Project	Intelligent Function Module
Installation	Learning the operating environment and installation method	Details						
	Learning a USB driver installation method				Details			
	Learning all functions of GX Works2				Outline			
	Learning the project types and available languages in GX Works2				Outline			
	Learning the basic operations and operating procedures when creating a simple project for the first time		Details					
Operation of GX Works2	Learning the basic operations and operating procedures when creating a structured project for the first time			Details				
	Learning the operations of available functions regardless of project type.				Details			
	Learning the functions and operation methods for programming				Outline	Details	Details	
	Learning data setting methods for intelligent function module							Details

(1) Operation of GX Works2

1

(2) Operations in each programming language

For details of instructions used in each programming language, refer to the section 3 on the next page

Purpose		GX Works2 Beginner's Manual		GX Works2 Version 1 Operating Manual	
	urpose	Simple Project	Structured Project	Simple Project	Structured Project
	Ladder	Outline		Details	
Simple Project	SFC	*1 Outline		Details	
	ST		Outline		Details
	Ladder	Outline		Details	
Structured	SFC	*1 Outline		Details	
Project	Structured ladder/ FBD		Outline		Details
	ST		Outline		Details

*1: MELSAP3 and FX series SFC only

(3) Details of instructions in each programming language

Purpose					MELSEC- Q/L Programming Manual			MELSEC-Q Programming /Structured Programming Manual	Manual for module to be used
	Fundamentals	Common Instructions	Special Instructions	Application Functions	Common Instruction	PID Control Instructions	SFC	Process Control Instructions	-
Learning details of programmable controller CPU error codes, special relays, and special registers									*1 Details
Learning the types and details of common instructions					Details				
Learning the types and details of instructions for intelligent function modules									Details
Learning the types and details of instructions for network modules									Details
Learning the types and details of instructions for the PID control function						Details			
Learning the types and details of the process control instructions								Details	
Learning details of specifications, functions, and instructions of SFC (MELSAP3)							Details		
Learning the fundamentals for creating a structured program	Details								
Learning the types and details of common instructions		Details							
Learning the types and details of instructions for intelligent function modules			Outline						Details
Learning the types and details of instructions for network modules			Outline						Details
Learning the types and details of instructions for the PID control function			Outline			Details			
Learning the types and details of application functions				Details					
Learning the types and details of the process control instructions	: Refer to the							Details	
	Learning details of programmable controller CPU error codes, special relays, and special registers Learning the types and details of common instructions Learning the types and details of instructions for intelligent function modules Learning the types and details of instructions for network modules Learning the types and details of instructions for network modules Learning the types and details of instructions for instructions Learning the types and details of specifications, functions, and instructions Learning the types and details of specifications, functions, and instructions of SFC (MELSAP3) Learning the fundamentals for creating a structured program Learning the types and details of instructions for instructions for intelligent function modules Learning the types and details of instructions for intelligent function for intelligent function for intelligent function for intelligent functions for network modules Learning the types and details of instructions for intelligent 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1 : Refer to the User's Manual (Hardware Design, Maintenance and Inspection) of the CPU module to be used.

1.2 Terms

This manual uses the generic terms and abbreviations listed in the following table to discuss the software packages and programmable controller CPUs. Corresponding module models are also listed if needed.

Term	Description
GX Works2	Product name of the software package for the MELSEC programmable controllers
Basic model QCPU	A generic term for the Q00JCPU, Q00CPU, and Q01CPU
High Performance model QCPU	A generic term for the Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, and Q25HCPU
Process CPU	A generic term for the Q02PHCPU, Q06PHCPU, Q12PHCPU, and Q25PHCPU
Redundant CPU	A generic term for the Q12PRHCPU and Q25PRHCPU
Universal model QCPU	A generic term for the Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q03UDVCPU, Q03UDECPU, Q03UDECPU, Q04UDHCPU, Q04UDVCPU, Q04UDEHCPU, Q06UDHCPU, Q06UDCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDHCPU, Q13UDVCPU, Q13UDEHCPU, Q20UDHCPU, Q20UDHCPU, Q26UDHCPU, Q26UDHCPU, Q26UDEHCPU, Q50UDEHCPU, and Q100UDEHCPU
High-speed Universal model QCPU	A generic term for the Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, and Q26UDVCPU
Built-in Ethernet port QCPU	A generic term for the Q03UDVCPU, Q03UDECPU, Q04UDVCPU, Q04UDEHCPU, Q06UDVCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDVCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDVCPU, Q26UDEHCPU, Q50UDEHCPU, and Q100UDEHCPU
Built-in Ethernet port LCPU	A generic term for the L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, and L26CPU-PBT
QCPU (Q mode)	A generic term for the Basic model QCPU, High Performance model QCPU, Process CPU, Redundant CPU, and Universal model QCPU.
LCPU	A generic term for the L02SCPU, L02SCPU-P, L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-P, L26CPU-PBT, and L26CPU-PBT
CPU module	A generic term for QCPU (Q mode) and LCPU
CC-Link IE	A generic term for CC-Link IE Controller Network system and CC-Link IE Field Network system
MELSECNET/H	The abbreviation for MELSECNET/H network system
Personal computer	A generic term for personal computer on which Windows [®] operates
Common instruction	A generic term for the sequence instructions, basic instructions, application instructions, data link instructions, multiple CPU dedicated instructions, multiple CPU high-speed transmission dedicated instructions, and redundant system instructions
Special instruction	A generic term for the module dedicated instructions, PID control instructions, socket communication function instructions, built-in I/O function instructions, and data logging function instructions
Application function	A generic term for the functions, such as functions and function blocks, defined in IEC61131-3. (The functions are executed with a set of common instructions in a programmable controller.)

This manual explains the programming methods and data used for control of the following modules and PID control using structured programming technique.

Function/module for explaining an instruction	Processing performed by the instruction	Reference
Analog module	 Switches the mode. (Offset/gain setting mode or normal mode) Reads the user range setting offset/gain value. Restores the user range setting offset/gain value. 	Section 5.1
Positioning module	 Restores the absolute position of the specified axis. Starts positioning of the specified axis. Executes teaching of the specified axis. Writes parameters/positioning data and block start data to a flash ROM. Initializes setting data. 	Section 5.2
Serial communication module	Sends and receives data to and from an external device.Registers and reads user frames.	Section 5.3
CC-Link system master/local module	 Reads and writes data from and to an intelligent device station on the CC-Link system. Reads and writes data from and to the auto-refresh buffer memory at the master station. Sets the network parameters. 	
CC-Link IE network module	 Sends and receives data to and from an external device. Reads and writes data from and to another station on the 	Section 5.4
MELSECNET/H network module	CC-Link IE or MELSECNET/H network system.	
Ethernet interface module	Sends and receives e-mails.	
PID control instruction	 Sets PID control data and performs PID operation for inexact differential and exact differential. Stops and starts operation of the specified loop. Changes the parameter of the specified loop. 	Chapter 6
Socket communication function	Opens/closes a connection.Reads receive data.Changes the receive mode.	Chapter 7

Function/module for explaining an instruction		Processing performed by the instruction	Reference	
	Positioning function	 Starts positioning of the specified axis. Starts OPR of the specified axis. Starts JOG operation of the specified axis. Restores the absolute position of the specified axis. Stops the operating axis. Changes the speed and the target position of the specified axis. 		
Built-in I/O function	Counter function	 Updates the current value of the specified CH. Sets a ring counter lower limit value and a ring counter upper limit value. Sets a preset value/latch counter value/sampling counter value. Sets the coincidence output No. n point. Measures the frequency/rotation speed. Stores the measured pulse value. Outputs the PWM wave form. 	Chapter 8	
Data logging function		 Generates a trigger on the data logging of the specified data logging configuration number. Resets the LOGTRG instruction of the specified data logging configuration number. 	Chapter 9	
SFC control		 Reads comment of an active step in the specified SFC block. Reads comment of transition condition associated with an active step in the specified SFC block. 	Chapter 10	

• Precautions on using instructions

For details of the specifications, functions, and operating timing of each instruction, refer to the related manuals of each module.

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This section explains the modules and versions applicable to the instructions explained in this manual.

For details of applicable versions,	refer to each instruction in Chapter 5.
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Function/mod	ule for explaining an instruction	Applicable version/serial number
	Q64AD, Q68ADV, Q68ADI, Q64AD-GH,	
	Q62AD-DGH, Q68AD-G, Q66AD-DG, Q64ADH,	
	Q64DAH, Q62DAN, Q64DAN, Q68DAVN,	
	Q68DAIN, Q62DA, Q64DA, Q68DAV, Q68DAI,	
Analog module	Q62DA-FG, Q66DA-G, Q64RD, Q64RD-G,	Applicable to all versions
	Q64TD, Q64TDV-GH, Q68TD-G-H01, Q68TD-	
	G-H02, Q68RD3-G, Q61LD, Q68CT, L60AD4,	
	L60AD4-2GH, L60DA4	
	QD75P1N, QD75P2N, QD75P4N, QD75D1N,	
	QD75D2N, QD75D4N, QD75P1, QD75P2,	
	QD75P4, QD75D1, QD75D2, QD75D4,	
Positioning module	QD75M1, QD75M2, QD75M4, QD75MH1,	Applicable to all versions
i contonnig modulo	QD75MH2, QD75MH4	
	LD75P1, LD75P2, LD75P4, LD75D1, LD75D2,	
	LD75D4	
	QJ71C24N, QJ71C24N-R2, QJ71C24N-R4,	The modules that can use the UINI instruction
Serial communication	QJ71C24, QJ71C24-R2	are limited.
module	LJ71C24, LJ71C24-R2	<i>⊆</i> Section 5.3.14
	QJ61BT11N, LJ61BT11	Applicable to all versions
		The modules that can use the RLPASET
	QJ61BT11	instruction are limited.
CC-Link system master/local		The instruction is applicable to the module of
module		which the function version is B and the first
module		five digits of the serial number are '03042' or
		higher.
		Section 5.4.7
CC-Link IE Controller		
Network module	QJ71GP21-SX, QJ71GP21S-SX	Applicable to all versions
CC-Link IE Field Network		
module	QJ71GF11-T2, LJ71GF11-T2	Applicable to all versions
MELSECNET/H network	QJ71LP21, QJ71LP21-25, QJ71LP21S-25,	
module	QJ71LP21G, QJ71BR11, QJ72LP25-25,	Applicable to all versions
module	QJ72LP25G, QJ72BR15	
Ethernet interface module	QJ71E71-100, QJ71E71-B5, QJ71E71-B2	Applicable to all versions
	LJ71E71-100	
	Q00JCPU, Q00UJCPU, Q00CPU, Q00UCPU,	
	Q01CPU, Q01UCPU, Q02CPU, Q02HCPU,	
	Q02UCPU, Q03UDCPU, Q03UDVCPU,	
	Q03UDECPU, Q04UDHCPU, Q04UDVCPU,	
	Q04UDEHCPU, Q06HCPU, Q06UDHCPU,	
	Q06UDVCPU, Q06UDEHCPU, Q10UDHCPU,	
CPU module supporting the	Q10UDEHCPU, Q12HCPU, Q12PRHCPU,	The modules that can use the instruction are
PID control instruction	Q13UDHCPU, Q13UDVCPU, Q13UDEHCPU,	limited.
	Q20UDHCPU, Q20UDEHCPU, Q25HCPU,	Section 6.1, Section 6.2
	Q25PRHCPU, Q26UDHCPU, Q26UDVCPU,	
	Q26UDEHCPU, Q50UDEHCPU,	
	Q100UDEHCPU	
	L02SCPU, L02SCPU-P, L02CPU, L02CPU-P,	
	L06CPU, L06CPU-P, L26CPU, L26CPU-P,	
	L26CPU-BT, L26CPU-PBT	
	, , , , , , , , , , , , , , , , , , ,	1

Function/modu	ule for explaining an instruction	Applicable version/serial number
Built-in Ethernet port QCPU, Built-in Ethernet port LCPU (Built-in Ethernet function)	Q03UDVCPU, Q03UDECPU, Q04UDVCPU, Q04UDEHCPU, Q06UDVCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDVCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDVCPU, Q26UDEHCPU, Q50UDEHCPU, Q100UDEHCPU L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU- PBT	The modules that can use the socket communication function instruction are limited when using the Built-in Ethernet port QCPU. The instruction is applicable to the module of which the function version is B and the first five digits of the serial number are '11012' or higher. The instruction is applicable to all versions when using the Built-in Ethernet port LCPU.
LCPU (Built-in I/O function)	L02SCPU, L02SCPU-P, L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT	Applicable to all versions
Data logging function	Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT	Applicable to all versions
CPU module supporting the SFC control instruction	Q02CPU, Q02HCPU, Q02PHCPU, Q03UDCPU, Q03UDVCPU, Q03UDECPU, Q04UDHCPU, Q04UDVCPU, Q04UDEHCPU, Q06HCPU, Q06PHCPU, Q06UDHCPU, Q06UDVCPU, Q06UDEHCPU, Q10UDHCPU, Q10UDEHCPU, Q12HCPU, Q12PHCPU, Q12PRHCPU, Q13UDHCPU, Q13UDVCPU, Q13UDEHCPU, Q20UDHCPU, Q20UDEHCPU, Q25HCPU, Q25PHCPU, Q25PRHCPU, Q26UDHCPU, Q26UDVCPU, Q26UDEHCPU, Q50UDEHCPU, Q100UDEHCPU	The modules that can use the instruction are limited. $\begin{bmatrix} \widehat{} & \widehat{} \end{bmatrix}$ Section 10.1

⊠POINT -

 How to check the applicable versior 	 How to check the applicable version or serial number 					
Intelligent function modules	: User's Manual or Reference Manual for the module listed in 'Manuals'					
CPU modules supporting PID control	ol: User's Manual (Function Explanation, Program Fundamentals) of the CPU module to be used					
Built-in Ethernet port QCPU	: QnUCPU User's Manual (Communication via Built-in Ethernet Port)					
 Manual for reference 						
S 'MANUALS'						

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INSTRUCTION TABLES

2.1	How to Read Instruction Tables	2-2
2.2	Module Dedicated Instruction	2-3
2.3	PID Control Instruction	2-10
2.4	Socket Communication Function Instruction	2-11
2.5	Built-in I/O Function Instruction	2-12
2.6	Data Logging Function Instruction	2-15
2.7	SFC Control Instruction	2-15

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Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
On-demand	G_ONDEMAND	Un), 61, 62, 0	Sends data using the on-demand		Serial	E 64
function transmission	GP_ONDEMAND	Un), (1), (2), (d)	function of MC protocol.			5-64
Nonprocedural	G_OUTPUT	Un), \$1, \$2, @	Sends the specified number of data.			5-68
protocol	GP_OUTPUT	(Un), (s1), (s2), (d)			Serial	5-00
communication	G_INPUT	Un, 6, (1), @	Reads the received data.			5-71
↑ (1)		 3	↑ (4)	† (5)	↑ 6	

Instruction tables in Section 2.2 have the following form:

Description

- ① Classifies instructions by application.
- ② Indicates the instructions used in a program.
- ③ Indicates the arguments of the instruction.
 - (s), (d): Source...... Stores data before operation.
 - (d), (d): Destination Indicates the destination of data after operation.
 - n, n1: Specifies the number of devices and the number of transfers.

 - (F): Specifies the start I/O number of a module.
- ④ Indicates the processing details of each instruction.

(5) Details of executing condition of each instruction are as follows:

Symbol	Executing condition
	Indicates an 'executed while ON' type instruction that is executed only while the precondition is ON. When the precondition is OFF, the instruction is not executed and does not perform processing.
	Indicates an 'executed once at ON' type instruction that is executed only at the rising pulse (OFF \rightarrow ON) of the precondition of the instruction. The instruction is not executed afterwards even when the condition is ON and thus does not perform processing.

(6) Indicates the execution target module of each instruction.

For details of the icons, refer to Chapter 4.

O Indicates the pages on which the instructions are explained.

2.2.1 Analog instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Mode switching	G_OFFGAN	Un), s	Moves to the offset/gain setting mode.		5-2
	GP_OFFGAN	Un), (s)	Moves to the normal mode.		5-2
Setting value	G_OGLOAD	(Un), (s), (d)	Reads the user range settings offset/gain value		5-4
reading	GP_OGLOAD	Un), (s), (d)	to the programmable controller CPU.		5-4
Setting value	G_OGSTOR	(un), (s), (d)	Restores the user range settings offset/gain value stored in the programmable controller		5 28
restoration	GP_OGSTOR	(m), (s), (d)	CPU.		5-28

2.2.2 Positioning instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	Z_ABRST1	Un, 6, 0			
Absolute position	Z_ABRST2	(Un), (6), (d)	Restores the absolute position of the specified axis.		5-53
restoration	Z_ABRST3	(Un), (6), (d)			0-00
	Z_ABRST4	(Un), (s), (d)			
Positioning start	ZP_PSTRT1	(Un), (s), (d)			
	ZP_PSTRT2	(un), (s), (d)	Starts positioning of the specified axis.		5-57
	ZP_PSTRT3	(un), (s), (d)	- Starts positioning of the specified axis.		5-57
	ZP_PSTRT4	(Un), (s), (d)			
	ZP_TEACH1	(Un), (s), (d)			
Teaching	ZP_TEACH2	(Lin), (s), (d)	Performs teaching for the specified axis.		5-59
loadining	ZP_TEACH3	(Lin), (s), (d)			0.00
	ZP_TEACH4	(Un), (s), (d)			
Writing to flash ROM	ZP_PFWRT	(m), (s), (d)	Writes the QD75 parameters, positioning data, and block start data to the flash ROM.		5-62
Setting data initialization	ZP_PINIT	(m), (s), (d)	Initializes the QD75 setting data.		5-64

2.2.3 Serial communication

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
On-demand	G_ONDEMAND	(m), (s), (s2, (d)	Sends data using the on-demand			
function transmission	GP_ONDEMAND	Un), 61, 62, 0	function of MC protocol.		Serial	5-66
Nonprocedural	G_OUTPUT	(m), s1, s2, d	Sends the specified number of data.			5-70
protocol	GP_OUTPUT	(m), (s1), (s2), (d)	- Sends the specified number of data.		Serial	5-70
communication	G_INPUT	(m), (s), (d), (d2)	Reads the received data.			5-73
	G_BIDOUT	Un, s1, s2, d	 Sends the specified number of data. 			5-76
Bidirectional protocol	GP_BIDOUT	Un, s1, s2, d			Serial	0.10
communication	G_BIDIN	Un*, (\$), (d), (d2	Reads the received data.		Seriar	5-79
	GP_BIDIN	(m), (s), (d), (d2)				0-10
Communication	G_SPBUSY	Un, d	Reads the data transmission/ reception status using the		Serial	5-81
status check	GP_SPBUSY	(ln), (d)	instruction.		Serial	5-01
Receive data clear	ZP_CSET	☞, ᢒ, Ձ, ෯, ֎	Clears receive data without stopping transmission using the nonprocedural protocol.		Serial	5-82
Data	Z_BUFRCVS	(m), (s), (d)	Receives data with an interrupt program using the nonprocedural protocol or bidirectional protocol.		Serial	5-85
transmission/ reception	G_PRR	(m), (s), (d)	Sends data by user frame according to the specification in user frame			
	GP_PRR	Un), (s), (d)	specification area for transmission using the nonprocedural protocol.			5-87
Initial setting	ZP_CSET	☞, ⊜, ֎, ๗, ֎	Sets the unit (word/byte) of the number of the data to be sent or received.		Serial	5-91
Programmable controller CPU monitor	ZP_CSET	UR, S, S, Ø, Ø, Ø	Registers and cancels the programmable controller CPU monitoring for using the programmable controller CPU monitoring function.		Serial	5-95
	G_PUTE	(m), (s1), (s2), (d)	Registers a user frames to the flash			5-103
Flash ROM user frame	GP_PUTE	(m), (s1), (s2), (d)	ROM.		Covial	5-105
registration/ reading	G_GETE	Un, \$1, \$2, d	Reads a user frames from the flash		Serial	5 106
Ŭ	GP_GETE	Un, \$1, \$2, d	ROM.			5-106
Mode switching	ZP_UINI	(m), (s), (d)	Switches the mode, transmission specification, and host station number.		Serial	5-109
Pre-defined	G_CPRTCL	(m), n1, n2, (s), (d)	Executes the protocols and			E 111
protocol communication	GP_CPRTCL	un), n1, n2, ⑤, ⓓ	 functional protocols written to the flash ROM. 		Serial	5-114

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2.2.4 Network dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
	J_RIRD	(m [°]), (s), (d), (d2			CC IE C	
Reading from the	JP_RIRD	£, \$, #, #			CC IE C CC IE F	
buffer memory of an intelligent device station	G_RIRD	☞, ⓒ, 邻, @	Reads data for the specified number of points from the buffer memory or device of the specified station.		CC-Link CC IE C	5-117
	GP_RIRD	un, s, t, æ			CC-Link CC IE C CC IE F	
	J_RIWT	un), (s), (d), (d)			CC IE C	
Writing to the	JP_RIWT	Jn), (S), (H), (2)			CC IE C CC IE F	
buffer memory of an intelligent device station	G_RIWT	un, s), Q, O	Writes data for the specified number of points to the buffer memory or device of the specified station.		CC-Link CC IE C CC-Link CC IE C CC IE F	5-122
	GP_RIWT	un, s), Q, O				
Reading from the	G_RIRCV	☞, ෧, ෨, ෨, ෨	Automatically performs handshaking with the specified station and reads data from the buffer memory of the specified station. This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).			
buffer memory of an intelligent device station (with handshake)	GP_RIRCV	₩, 9, 2, 0, 4			CC-Link	5-127
Writing to the	G_RISEND	☞, €, €, ⊕, @	Automatically performs handshaking with the specified station and writes			
buffer memory of an intelligent device station (with handshake)	GP_RISEND	☞, €, €, ⊕, @	data to the buffer memory of the specified station. This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).		CC-Link	5-131
Reading from the	G_RIFR	un), n1, n2, n3, d	Reads data from the auto-refresh buffer memory of the specified			
Reading from the auto-refresh buffer memory of the master station	GP_RIFR	u͡n, n1, n2, n3, ⓓ	station. This instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).		CC-Link	5-135
Writing to the	G_RITO	un), n1, n2, n3, d	Writes data to the auto-refresh buffer memory of the specified station.			
auto-refresh buffer memory of the master station	GP_RITO	ரு, n1, n2, n3,	This instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2.		CC-Link	5-137

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page	
Network parameter	G_RLPASET	(m), 6), 62, 63, 64, 65, d	Sets network parameter to the master station and starts up the data		CC-Link	5-139	
setting	GP_RLPASET	un), (1), (2), (3), (4), (5), (d)	link.				
	J_READ	Jn), \$1, \$2, \$1, \$2					2
	JP_READ	Jn, st, s2, d1, d2	Reads data from a word device of			- 440	7
	G_READ	Un), 61, 62, 61, 62	another station.		-	5-146	UCTIO S
	GP_READ	Un), 61, 62, 61, 62					INSTRUCTION TABLES
	J_SREAD	Jn), \$1, \$2, d), #2, #3))				
Device data read/	JP_SREAD	Jn), \$1, \$2, \$1, \$2, \$3	Reads data from a device of another		-	5 152	
	G_SREAD	Un, s1, s2, d1, d2, d3	station (with completion device).		CC IE C	5-152	
	GP_SREAD	Un), \$1, \$2, \$1, \$2, \$3			CC IE F		
write	J_WRITE	Jn), 61, 62, 63, 61	Writes data to a device of another station.		NET/H		
	JP_WRITE	Jn), 61, 62, 63, 61			Ether	E 450	
	G_WRITE	Un), 61, 62, 63, 61				5-156	
	GP_WRITE	Un ³ , 61, 62, 63, 61					
	J_SWRITE	Jn), 61, 62, 61, 62, 63			-		
	JP_SWRITE	Jn), 61, 62, 61, 62, 63	Writes data to a device of another			5 400	
	G_SWRITE	Un, 61, 62, 61, 62, 63	station (with completion device).			5-163	
	GP_SWRITE	Un), 61, 62, 61, 62, 63					
	J_SEND	(Jn), (s1), (s2), (d)					
	JP_SEND	(In), (s1), (s2), (d)				E 407	
	G_SEND	Un), (s1), (s2), (d)	Sends data to another station.		-	5-167	
	GP_SEND	Un), (s1), (s2), (d)			CC IE C		
Message (user-specified	J_RECV	(In), (S), (d), (d2)			CC IE F		
data) communication	JP_RECV	(Jn [®]), (S), (d), (d2	Reads received data from another		NET/H	E 475	
	G_RECV	Un), (\$), (1), (2)	station (for main program).		Ether	5-175	
	GP_RECV	Un), (s), (d), (d)	1				
	Z_RECVS	(m), (s), (2), (d)	Reads received data from another station (for interrupt program).			5-180	

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
Transient request	J_REQ	Jn), §1, ©, @, @			CC IE C	
	JP_REQ	☞, ᢒ, ֎, ๗, ֎	Executes remote RUN/STOP for another station.		CC IE C CC IE F NET/H Ether	5-183
to another station	G_REQ	Un), s1, s2, e1, e2	Reads/writes clock data from another station.		CC IE C	5-165
	GP_REQ	☞, ᢒ, ֎, ๗, ֎			CC IE C CC IE F NET/H Ether	
Read from other	J_ZNRD	(Ln), n1, (S), n2, (d), (d)	Reads data from a device of a programmable controller on another		_	5-192
station devices	JP_ZNRD	(Ln), n1, (S), n2, (d), (d)	station. (In units of words)			5-192
Write to other station devices	J_ZNWR	un, n1, s, n2, d, d2	Writes data to a device of a programmable controller on another		NET/H Ether	5-195
	JP_ZNWR	Un), n1, (s), n2, (d), (d)				5-195
	Z_RRUN_J	(m [°]), (s ¹), (s ²), (s ³), (s ⁴), (d	Executes remote RUN for a CPU module on another station.			
Remote	ZP_RRUN_J	(m [°]), (s1), (s2), (s3), (s4), (d)			CC IE C	5-199
RUN	Z_RRUN_U	Un, \$1, \$2, \$3, \$4, d			NET/H	5-155
	ZP_RRUN_U	Un, s1, s2, s3, s4, d				
	Z_RSTOP_J	(In [®]), (s1), (s2), (s3), (s4), (d)				
Remote	ZP_RSTOP_J	(In [®]), (s1), (s2), (s3), (s4), (d)	Executes remote STOP for a CPU		CC IE C	5-202
STOP	Z_RSTOP_U	Un, \$1, \$2, \$3, \$4, d	module on another station.		NET/H	5-202
	ZP_RSTOP_U	Un), \$1, \$2, \$3, \$4, d				
	Z_RTMRD_J	(m [°]), (s1), (s2), (s3), (d1), (d2)				
Reading clock data from another	ZP_RTMRD_J	(m [°]), (s1), (s2), (s3), (d1), (d2)	Reads clock data from a CPU		CC IE C	5-205
station	Z_RTMRD_U	Un [°] , s1, s2, s3, d1, d2	module on another station.		NET/H	5-205
	ZP_RTMRD_U	Un, \$1, \$2, \$3, \$1, \$2				
	Z_RTMWR_J	Jn, \$1, \$2, \$3, \$4, d				
Writing clock data	ZP_RTMWR_J	(Jn [®]), (s ¹), (s ²), (s ³), (s ⁴), (d)	Writes clock data to a CPU module		CC IE C	5-207
to another station	Z_RTMWR_U	Un), \$1, \$2, \$3, \$4, d	on another station.		NET/H	5-207
	ZP_RTMWR_U	un), (1), (2), (3), (4), (d)				

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
Reading from buffer memory of intelligent function	Z_REMFR	(m), n1, n2, n3, n4, n5, (d), @	Reads data from the buffer memory of an intelligent function module on		NET/H	5-210
module on remote I/O station	ZP_REMFR	له), n1, n2, n3, n4, n5, ி, இ	the remote I/O station.		CC IE F NET/H	
Writing to buffer memory of intelligent function	Z_REMTO	(m), n1, n2, n3, n4, n5, (d), @	Writes data to the buffer memory of an intelligent function module on the		NET/H	5-212
module on remote I/O station	ZP_REMTO	(m), n1, n2, n3, n4, n5, (d) , @	remote I/O station.		CC IE F NET/H	
Setting parameter	G_CCPASET	☞, ♥, ֎, ֎, ֎, ֎	Set parameters for master/local modules (master station).		CC IE F	5-214
	GP_CCPASET	Ln [®] , s ¹ , s ² , s ³ , s ⁴ , d				
Connection opening	ZP_OPEN	un), 61, 62, d	Opens a connection.		Ethor	5-220
or closing	ZP_CLOSE	(m), s1, s2, d	Closes a connection.		Ether	5-224
	ZP_BUFRCV	☞, ᢒ, ֎, ๗, ֎	Reads received data. (for main program)			5-227
Fixed buffer communication	Z_BUFRCVS	(m), (s), (d)	Reads received data. (for interrupt program)		Ether	5-231
	ZP_BUFSND	Un), 61, 62, 63, d	Sends data.			5-233
Reading or clearing	ZP_ERRCLR	Un), (s), (d)	Clears error information.		Filmer	5-237
error information	ZP_ERRRD	Un), (s), (d)	Reads error information.		Ether	5-240
Re-initialization/	Z_UINI	(m), (s), (d)	Executes re-initialization.		CC IE C	
station number setting/changing switch setting	ZP_UINI	Ur), (9), (1)	Sets the host station number.Changes the switch setting.		CC IE C Ether	5-243
E-mail	ZP_MRECV	Un), (s), (d), (d2)	Reads received e-mail.			5-247
communication	ZP_MSEND	(m), (s), (s), (d)	Sends an e-mail.		Ether	5-252

2.3.1 PID control instruction (inexact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	S_PIDINIT	6	Sets data to be used for PID operation.		6-2
Data Setting	SP_PIDINIT	S			0-2
PID operation	S_PIDCONT	6	Performs PID operation based on the set value (SV)		6-7
	SP_PIDCONT	S	and process value (PV).		0-7
PID operation stop	S_PIDSTOP	n	Stops the PID operation for the specified loop		
	SP_PIDSTOP	n	number.		6-11
PID operation start	S_PIDRUN	n	Starts the PID operation for the specified loop		0 11
	SP_PIDRUN	n	number.		
Operation	S_PIDPRMW	n,	Changes operation parameter of the specified loop number.		6-12
parameter change	SP_PIDPRMW	n,			0-12

2.3.2 PID control instruction (exact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	PIDINIT	s	Sets data to be used for PID operation.		6-16
	PIDINITP	(S)			0-10
PID operation	PIDCONT	(S)	Performs PID operation based on the set value (SV)		6-21
•	PIDCONTP	(§)	and process value (PV).		0-21
PID operation stop	PIDSTOP	n	Stops the PID operation for the specified loop		
	PIDSTOPP	n	number.		6-26
PID operation start	PIDRUN	n	Starts the PID operation for the specified loop		0-20
	PIDRUNP	n	number.		
Operation	PIDPRMW	n,	Changes operation parameter of the specified loop number.		6-27
parameter change	PIDPRMWP	n, ®			0-21

2.4 Socket Communication Function Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Opening/closing	SP_SOCOPEN	(m), (s), (s2, (d)	Establishes a connection.		7-2
connection	SP_SOCCLOSE	(m), (s), (s2, (d)	Shuts a connection off.		7-5
Reading receive	SP_SOCRCV	(m), €1, €2, €1, €2	Reads receive data. (Reading at the end process)		7-8
data	S_SOCRCVS	(Lm), (S), (d)	Reads receive data. (Reading at the instruction execution)		7-11
Sending data	SP_SOCSND	(m), (s), (s), (s), (d)	Sends data.		7-13
Reading connection information	SP_SOCCINF	ur), (1), (2), (1)	Reads connection information.		7-16
Changing destination	SP_SOCCSET	(un [°]), (s1), (s2)	Changes a destination of a UDP/IP connection.		7-19
Changing receive mode	SP_SOCRMODE	(m), (s1), (s2)	Changes the receive mode of a connection.		7-22
Reading data from receive data area	S_SOCRDATA	un), @, @, n, @	Reads data from the receive data area.		7-24
	SP_SOCRDATA	⊎ા, શ, જ, ॥, હ			1 L 7

2.5.1 Positioning function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page	
	IPPSTRT1	n				
	IPPSTRT1P	n	Specifies a data number to be executed from "Positioning Data" No. 1 to No. 10 which are		8-2	
	IPPSTRT2	n	previously set in GX Works2, and starts the positioning.		0-2	
	IPPSTRT2P	n				
Positioning start	IPDSTRT1	s	Regardless of "Positioning Data" No. 1 to No. 10			
r Usitioning start	IPDSTRT1P	s	which are previously set in GX Works2, starts the positioning using the data stored in the		8-3	
	IPDSTRT2	(S)	devices starting from the one specified for		0-5	
	IPDSTRT2P	(S)	control data.			
	IPSIMUL	n1, n2	Starts the positioning of the axis 1 "Positioning Data" number and the axis 2 "Positioning Data"		8-6	
	IPSIMULP	n1, n2	number simultaneously.		8-6	
	IPOPR1	s				
OPR start	IPOPR1P	(S)	Specifies a method and starts the OPR of the		8-7	
OF K Start	IPOPR2	s	specified axis.			
	IPOPR2P	s				
JOG start	IPJOG1	61,62	Starts the JOG operation of the specified axis.		8-9	
JUG start	IPJOG2	61,62			0-3	
Absolute position	IPABRST1	(s), (d)	Executes the absolute position restoration of the		8-11	
restoration	IPABRST2	(s), (d)	specified axis.		0-11	
Stop	IPSTOP1	-	Stops the axis in operation.		8-13	
Stop	IPSTOP2	-			0-13	
	IPSPCHG1	s				
Speed change	IPSPCHG1P	s	Changes the speed of the specified axis.		8-14	
Speed change	IPSPCHG2	s	- Changes are speed of the specified axis.		0-14	
	IPSPCHG2P	s				
	IPTPCHG1	s				
Target position	IPTPCHG1P	s	Changes the target position of the specified		8-16	
change	IPTPCHG2	s	axis.		8-16	
	IPTPCHG2P	(S)]			

2.5.2 Counter function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page	
	ICCNTRD1	-				
	ICCNTRD1P	-	Stores the most recent value for the current		8-18	
Current value read	ICCNTRD2	-	value of the specified CH.			
	ICCNTRD2P	-				
	ICRNGWR1	61, 62				
Ring counter upper/lower limit	ICRNGWR1P	61, 62	Sets a ring counter lower limit value and upper		8-19	
value write	ICRNGWR2	61, 62	limit value of the specified CH.		0-19	
	ICRNGWR2P	61, 62				
	ICPREWR1	s				
Preset value write	ICPREWR1P	s	Sate a propert value of the specified CH		8-21	
Preset value write	ICPREWR2	s	— Sets a preset value of the specified CH.			
	ICOREWR2P	s				
	ICLTHRD1	n, @				
Latch counter	ICLTHRD1P	n, @	Stores a latch counter value of the specified CH.		8-22	
value read	ICLTHRD2	n, @				
	ICLTHRD2P	n, @				
	ICSMPRD1	d			- 8-23	
Sampling counter	ICSMPRD1P	d	Stores a sampling counter value of the specified			
value read	ICSMPRD2	d	СН.			
	ICSMPRD2P	d				
	ICCOVWR1	n, ®				
Coincidence	ICCOVWR1P	n, ®	Sets a coincidence output No. n point of the		8-24	
output point write	ICCOVWR2	n,	specified CH.		0-24	
	ICCOVWR2P	n, ®				
Frequency	ICFCNT1	d	Measures the frequency of the specified CH.		8-25	
measurement	ICFCNT2	d			- 0-20	
Rotation speed	ICRCNT1	d	Measures the rotation speed of the specified		8-26	
measurement	ICRCNT2	d	CH.			

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Pulse measurement read	ICPLSRD1	Ø			
	ICPLSRD1P	đ	Stores the measured pulse value of the		8-27
	ICPLSRD2	đ	specified CH.		• =:
	ICPLSRD2P	Ø			
PWM output	ICPWM1	s), s2	Outputs the PWM waveform of the specified CH.		8-28
	ICPWM2	s), ©			0.20

2.6 Data Logging Function Instruction

Classification	Instruction name	Argument Processing details		Executing condition	Page
Trigger logging set/reset	LOGTRG	n	Generates the trigger conditions in a trigger logging. Stores the data sampling results to the data logging file for the number of times specified in the trigger logging configuration of the programming tool.		9-2
	LOGTRGR	n	Resets the trigger conditions		

2.7 SFC Control Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
SFC step comment read	S_SFCSCOMR	n1, n2, n3, @, @	Reads comment of an active step in the specified SFC block by the specified number.		10-2
	SP_SFCSCOMR	n1, n2, n3, ⓓ , @			
SFC transition condition comment read	S_SFCTCOMR	n1, n2, n3, @, @	Reads comment of transition condition associated with an active step in the specified SFC block by the specified number.		10-4
	SP_SFCTCOMR	n1, n2, n3, ⓓ , @			

MEMO



CONFIGURATION OF INSTRUCTIONS

3.1	Configuration of Instructions	3-2

1

Instructions available in the CPU module can be divided into an instruction name and an argument.

The application of an instruction name and an argument are as follows:

- Instruction name..... Indicates the function of the instruction.
- Argument Indicates the I/O data used in the instruction.

Arguments are classified into I/O number, source data, destination data, number of devices, executing condition, and execution result.

- (1) I/O number
 - (a) I/O number is data that set a module in which the instruction is to be executed. Set the I/O number by start I/O number or a network number of the module depending on the instruction.
 - (b) Setting the start I/O number (Un) of the module
 Set the higher two digits when expressing the start I/O number in three digits for the module in which the instruction is to be executed.
 Set the start I/O number in a numeric value or character string according to the data type available with the instruction.
 - Setting the start I/O number in word (unsigned)/16-bit string or word (signed) data type

Set the start I/O number of the module for 'n' of 'Un'. Example: For the module whose start I/O number is 020H: 02

 Setting the start I/O number in string data type Set the start I/O number in the format of "Un" (n: start I/O number of the module).
 Example: For the module whose start I/O number is 020H: "02"

(c) Network number (Jn) setting

Set the network number of the network module/Ethernet module in which the instruction is to be executed.

Set a network number indicated below, in word (unsigned)/16-bit string or word (signed) data type, for 'n' of 'Jn'.

- 1 to 239 : Network number
- 254 : Network specified in "Valid module during other station access" on the GX Works2 network parameter screen

Example: When the network number is 1: 1

- (2) Source (s)
 - (a) A source is data used in an operation.
 - (b) The following source types are available depending on the device specified in an instruction:
 - (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.
- (3) Destination \bigcirc
 - (a) Data after the operation are stored to a destination.
 - (b) Set a device in which data are to be stored to a destination.
 - (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.

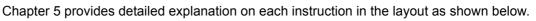
For details of the configuration of instructions for labels and structures, refer to MELSEC-Q/L/F Structured Programming Manual (Fundamentals).

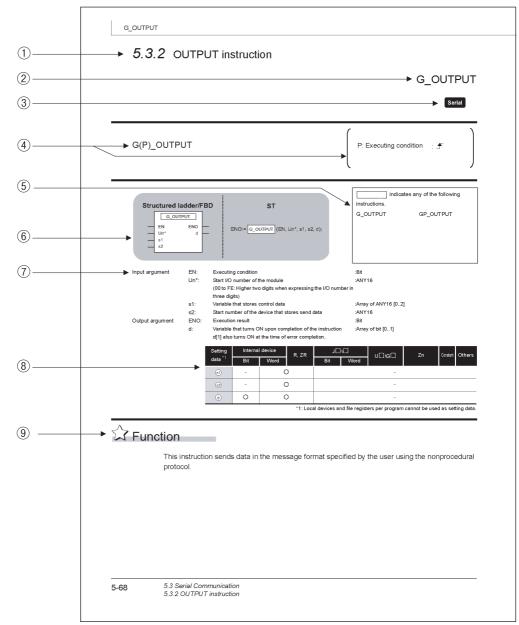
MEMO



HOW TO READ INSTRUCTIONS

1





- 1 Indicates a section number and an outline of an instruction.
- 2 Indicates an instruction to be explained.

③ Indicates the instruction execution target module.

If one instruction is to be executed in two or more modules, applicable modules are indicated using icons.

Module	lcon	Module	lcon
Serial communication	Serial	Built-in Ethernet port QCPU	QnUDE(H)
Modem interface	Modem	High-speed Universal model QCPU	QnUDV
CC-Link	CC-Link	LCPU	L CPU
CC-Link IE Controller Network	CC IE C	Universal model QCPU	Universal
CC-Link IE Field Network	CC IE F	High Performance model QCPU	High performance
MELSECNET/H	NET/H	Process CPU	Process
Ethernet	Ether	Redundant CPU	Redundant

④ Indicates the instruction name and executing condition of the instruction.

Executing condition	Non-conditional execution	Executed while ON	Executed once at ON	Executed while OFF	Executed once at OFF
Symbols on the corresponding page	No symbol				

- (5) Indicates the instruction names that can be described.
- ⑥ Written formats in the structured ladder/FBD and structured text language
- ⑦ Indicates the names of input and output arguments, and the data type of each argument. For details of each data type, refer to MELSEC-Q/L/F structured programming manual (Fundamentals).
- (8) Devices that can be used in the instruction are marked with \bigcirc .

The following table shows applicable classification for usable devices.

Device classification	Internal device (system, user)		File Link direct			function		Constant*5	Others ^{*5}
	Bit	Word	R, ZR	Bit	Word	U[]]\G[]]	Zn		
Usable device ^{*1}	X, Y, M, L, SM, F, B, SB, FX, FY ^{*2}	T, ST, C, ^{*3} D, W, SD, SW, FD, @[]	R, ZR	J [] /SB] [] /K] [] /X	1⊞/SM 1⊞/M	U[]]\G[]	Z	K, H, E, \$,	P, I, J, U, DX, DY, N, BL, TR, BL\S, V

*1 : For description of each device, refer to the User's Manual (Function Explanation, Program Fundamentals) of the CPU module currently being used.

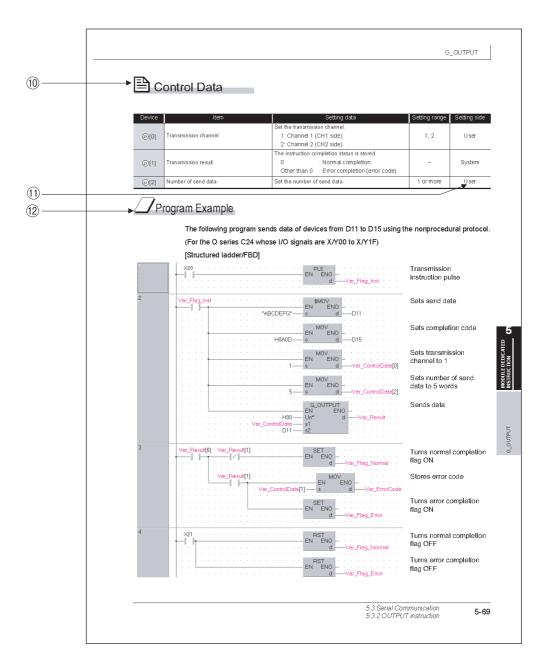
*2 : FX and FY can be used in bit data only, and FD can be used in word data only in the PID control instruction.

*3 : T, ST, and C can be used in word data only (cannot be used in bit data).

*4 : These devices can be used in CC-Link IE, MELSECNET/H, and MELSECNET/10.

 $^{\ast}5$: The Constant and Others columns describe settable devices.

(9) Indicates the processing performed by the instruction.



1 Indicates data such as control data, send data or receive data, that are used for an input argument or output argument in an instruction.

Example: Control data to be used in the CC-Link instruction 'GP_RIRD'

(1) The setting side indicates the following:

User : Data set by user before dedicated instruction execution

System : Data stored by the programmable controller CPU after dedicated instruction execution

The setting does not need to be set by the user.

If the setting is set by the user, data cannot be read normally.

2 Indicates the program examples of structured ladder/FBD/ST.

The program examples are when the conditions are satisfied. The program example shown above shows that the conditions are satisfied in ladder block number 3.

The processing when the conditions are not satisfied, create appropriate programs as necessary.



MODULE DEDICATED INSTRUCTION

5.1	Analog Instruction	. 5-2
5.2	Positioning Instruction	5-53
5.3	Serial Communication	5-66
5.4	Network Dedicated Instruction	5-117

1

5.1 Analog Instruction

5.1.1 OFFGAN instruction

G_OFFGAN

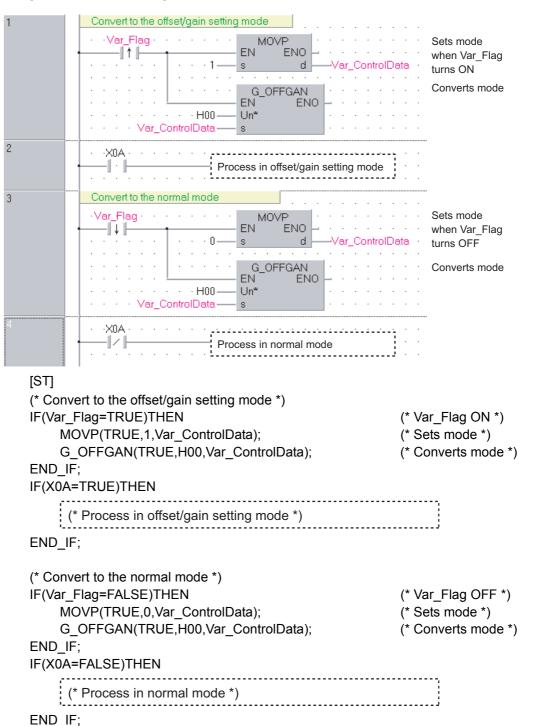
G(P)_OFFG	AN		P: Executing condition :
Structured I G_OFF EN Un* s		D ST ENO:= <u>G_OFFGAN</u> (EN, Un*, s);	indicates any of the following instructions. G_OFFGAN GP_OFFGAN
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the three digits)	:Bit :ANY16 I/O number in
	S:	Mode switching 0: To normal mode 1: To offset/gain setting mode	:ANY16
Output argument	ENO:	Execution result	:Bit
	Setting data ^{*1}	Internal device R, ZR Jiii\	UIII\GIII Zn Constant Othe



This instruction converts the mode of analog modules. (normal mode to offset/gain setting mode, offset/gain setting mode to normal mode)

Program Example

The following program converts the mode of the A/D converter module mounted on the I/O numbers from X/Y00 to X/Y0F to the offset/gain setting mode when Var_Flag turns ON, and gets it back to the normal mode when Var_Flag turns OFF.



[Structured ladder/FBD]

5.1.2 OGLOAD instruction

G_OGLOAD

G(P)_OGLO	AD		P: Executing condition :)
Structured I G_OGI EN Un* s		ST ENO:=(EN, Un*, s, d	indicates any of the following instructions. G_OGLOAD GP_OGLOAD	
Input argument	Un*: Start I/0 (00 to F three d	•		
Output argument	ENO: Executi d: Variable	e that stores control data ion result e that turns ON upon completion of the i so turns ON at the time of error completio		
	Setting data ^{*1} s	Internal device R, ZR Bit Word - O	J\ Bit Word U\Gi Zn Constant Othe	ers
	d	· *1: Local c	_ devices and file registers per program cannot be used as setting d	lata.

Grant Function

This instruction reads the user range settings offset/gain values of analog modules to the CPU.

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ি[2]	Pass data classification setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH4 CH3 CH2 CH1	0000н to 000Fн	User
⑤ [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH1 User range settings offset value	_	-	System
s [13]	CH1 User range settings gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
⑤ [16]	CH3 User range settings offset value	-	-	System
s [17]	CH3 User range settings gain value	-	-	System
⑤ [18]	CH4 User range settings offset value	_	_	System
s [19]	CH4 User range settings gain value	_	-	System

(1) Q64AD/Q64DAN/Q64DA/Q64DAH/L60AD4/L60DA4 *1

*1 : Set the data only to the Pass data classification setting \circledast [2].

(2) Q68ADV/Q68ADI/Q68DAVN/Q68DAV/Q68DAIN/Q68DAI/Q68CT *1

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	_
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
জ [2] জ [3]	- System area	_	-	_
§ [4]	CH1 Industrial shipment settings offset value	_	_	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
§ [6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
⑤ [11]	CH4 Industrial shipment settings gain value	_	_	System
s[12]	CH5 Industrial shipment settings offset value	-	-	System
<u>ি</u> [13]	CH5 Industrial shipment settings gain value	-	_	System
ি [14]	CH6 Industrial shipment settings offset value	-	_	System
<u> </u> [15]	CH6 Industrial shipment settings gain value	-	-	System
<u> </u> [16]	CH7 Industrial shipment settings offset value	-	-	System
<u>জ</u> [17]	CH7 Industrial shipment settings gain value	-	-	System
<u>জ</u> [18]	CH8 Industrial shipment settings offset value	-	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
ঙ [20]	CH1 User range settings offset value	-	-	System
\$[21]	CH1 User range settings gain value	-	-	System
\$ [22]	CH2 User range settings offset value	_	-	System
\$ [23]	CH2 User range settings gain value	_	-	System
\$ [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
s [26]	CH4 User range settings offset value	-	-	System
\$[27]	CH4 User range settings gain value	-	_	System
\$[28]	CH5 User range settings offset value	_	_	System
\$[29]	CH5 User range settings gain value	-	-	System
\$[30]	CH6 User range settings offset value	-	_	System
\$[31]	CH6 User range settings gain value	-	-	System
\$[32]	CH7 User range settings offset value	-	_	System
\$ [33]	CH7 User range settings gain value	-	-	System
\$[34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	-	-	System

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(3) Q64AD-GH/Q64ADH/L60AD4-2GH^{*1}

Control data of Q64AD-GH/Q64ADH/L60AD4-2GH (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	_
୍ରାର		The instruction completion status is stored.		
জ [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify the voltage/current of the offset/gain values to		
		be read. <q64ad-gh q64adh=""></q64ad-gh>		
		0: Voltage specified		
• • • • •		1: Current specified	0000н to	Lleen
\$[2]	Pass data classification setting	<l60ad4-2gh></l60ad4-2gh>	000Fн	User
		0: User range (Bipolar: Voltage)		
		1: User range (Unipolar: Current)		
		0 to 0 CH4 CH3 CH2 CH1		
⑤ [3]	System area	_	-	-
ি [4]	CH1 Industrial shipment settings offset value (L)			System
s [5]	CH1 Industrial shipment settings offset value (H)	_	-	System
⑤[6]	CH1 Industrial shipment settings gain value (L)	_	_	System
\$[7]	CH1 Industrial shipment settings gain value (H)	_	_	System
⑤[8]	CH2 Industrial shipment settings offset value (L)			System
⑤ [9]	CH2 Industrial shipment settings offset value (H)	_	-	System
<u></u> জ[10]	CH2 Industrial shipment settings gain value (L)	_	_	System
s[11]	CH2 Industrial shipment settings gain value (H)			Oystern
<u>জ</u> [12]	CH3 Industrial shipment settings offset value (L)	_	_	System
s [13]	CH3 Industrial shipment settings offset value (H)			,
s[14]	CH3 Industrial shipment settings gain value (L)	_	-	System
s [15]	CH3 Industrial shipment settings gain value (H)			
s [16]	CH4 Industrial shipment settings offset value (L)	_	-	System
<u> </u> [17]	CH4 Industrial shipment settings offset value (H)			
<u></u>	CH4 Industrial shipment settings gain value (L)	_	-	System
(§ [19]	CH4 Industrial shipment settings gain value (H)			
<u> </u>	CH1 User range settings offset value (L) CH1 User range settings offset value (H)	-	-	System
<u></u> (হ1] (ড) (22)	CH1 User range settings gain value (L)			
s [23]	CH1 User range settings gain value (H)	-	-	System
§ [24]	CH2 User range settings offset value (L)			
§ [25]	CH2 User range settings offset value (H)	-	-	System
<u>\$</u> [26]	CH2 User range settings gain value (L)			
⑤[27]	CH2 User range settings gain value (H)	-	-	System
s [28]	CH3 User range settings offset value (L)			Sustam
s [29]	CH3 User range settings offset value (H)	-	-	System

G_OGLOAD

Device	Item	Setting data	Setting range	Setting side
s [30]	CH3 User range settings gain value (L)			System
ি [31]	CH3 User range settings gain value (H)	-	_	System
§ [32]	CH4 User range settings offset value (L)			System
s [33]	CH4 User range settings offset value (H)	_	_	System
⑤ [34]	CH4 User range settings gain value (L)	_	_	System
\$ [35]	CH4 User range settings gain value (H)		_	Gystelli

Control data of Q64AD-GH/Q64ADH/L60AD4-2GH (2/2)

*1 : Set the data only to the Pass data classification setting \$ [2].

(4) Q62AD-DGH^{*1}

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	_	-	
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	System area	_	_	_
\$[3]				_
⑤ [4]	CH1 Industrial shipment settings offset value (L)		_	System
s [5]	CH1 Industrial shipment settings offset value (H)			Oystern
⑤[6]	CH1 Industrial shipment settings gain value (L)		_	System
⑤ [7]	CH1 Industrial shipment settings gain value (H)	_		Oystem
⑤[8]	CH2 Industrial shipment settings offset value (L)	_	_	System
s [9]	CH2 Industrial shipment settings offset value (H)			Oyotom
s [10]	CH2 Industrial shipment settings gain value (L)		_	System
\$[11]	CH2 Industrial shipment settings gain value (H)			Oystern
\$[12] to \$[19]	System area	_	_	-
\$ [20]	CH1 User range settings offset value (L)			System
\$ [21]	CH1 User range settings offset value (H)	_	_	System
\$ [22]	CH1 User range settings gain value (L)		_	System
s [23]	CH1 User range settings gain value (H)			Oystem
s [24]	CH2 User range settings offset value (L)	_	_	System
s [25]	CH2 User range settings offset value (H)			Oyotom
s [26]	CH2 User range settings gain value (L)			System
s [27]	CH2 User range settings gain value (H)		_	Oystom
\$ [28] to \$ [35]	System area	-	_	-

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(5) Q68AD-G^{*1}

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	-	-
		The instruction completion status is stored.		
<u></u> \$[1]	Completion status	0 :Normal completion	-	System
		Other than 0 :Error completion (error code) Specify the voltage/current of the offset/gain values to		
		be read.		
0.000		0: Voltage specified	0000н to	Lleen
s [2]	Pass data classification setting	1: Current specified	00FFн	User
		b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 0 to 0 CH8CH7CH6CH5CH4CH3CH2CH1		
⑤ [3]	System area	-	-	-
s [4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
s [6]	CH2 Industrial shipment settings offset value	_	-	System
\$[7]	CH2 Industrial shipment settings gain value	_	-	System
\$[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	-	System
⑤ [10]	CH4 Industrial shipment settings offset value	_	-	System
⑤ [11]	CH4 Industrial shipment settings gain value	_	-	System
s[12]	CH5 Industrial shipment settings offset value	_	-	System
ি [13]	CH5 Industrial shipment settings gain value	_	-	System
<u>জ</u> [14]	CH6 Industrial shipment settings offset value	_	-	System
s[15]	CH6 Industrial shipment settings gain value	_	-	System
<u></u> ال	CH7 Industrial shipment settings offset value	_	-	System
<u>জ</u> [17]	CH7 Industrial shipment settings gain value	_	-	System
s[18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
s [20]	CH1 User range settings offset value	_	-	System
s[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
<u></u> ال	CH2 User range settings gain value	_	-	System
s[24]	CH3 User range settings offset value	_	_	System
s [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	_	-	System
s[27]	CH4 User range settings gain value	_	_	System
<u></u> [28]	CH5 User range settings offset value	_	_	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s[31]	CH6 User range settings gain value	_	-	System
<u>s</u> [32]	CH7 User range settings offset value	_	-	System
<u> </u>	CH7 User range settings gain value	-	_	System
<u> </u>	CH8 User range settings offset value	-	_	System
⑤ [35]	CH8 User range settings gain value	_	_	System

*1 : Set the data only to the Pass data classification setting $\ensuremath{\textcircled{\$}}$ [2].

(6) Q66AD-DG^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	_
©[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
জ [2] জ [3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
§ [5]	CH1 Industrial shipment settings gain value	_	_	System
⑤[6]	CH2 Industrial shipment settings offset value	_	_	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
s [13]	CH5 Industrial shipment settings gain value	_	-	System
<u>ি</u> [14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
\$ [16] to \$ [19]	System area	_	_	-
s [20]	CH1 User range settings offset value	_	-	System
s [21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
<u></u> ا	CH2 User range settings gain value	-	-	System
s [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
s [26]	CH4 User range settings offset value	-	-	System
<u>(</u> 27]	CH4 User range settings gain value	_	-	System
\$ [28]	CH5 User range settings offset value	-	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
\$[31]	CH6 User range settings gain value	-	-	System
\$ [32] to \$ [35]	System area	_	_	_

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(7) Q62DAN/Q62DA *1

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
		The instruction completion status is stored.		
ঙ[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify the voltage/current of the offset/gain values to be read.		
		0: Voltage specified	0000н to	
⑤ [2]	Pass data classification setting	1: Current specified	0003н	User
		b15 b2 b1 b0 0 to 0 CH2 CH1		
s [3]	System area	_	-	-
⑤[4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
s [6]	CH2 Industrial shipment settings offset value	_	-	System
s[7]	CH2 Industrial shipment settings gain value	_	-	System
s [8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	_	-	System
s[10]	CH2 User range settings offset value	-	-	System
s [11]	CH2 User range settings gain value	-	-	System

*1 : Set the data only to the Pass data classification setting [2].

(8) Q62DA-FG^{*1}

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	_	_	
<u>৩ [1]</u>	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
® [2]	Pass data classification setting	Specify the user range setting to read the offset/gain values. Он: User range setting 1 specified 1н: User range setting 2 specified 2н: User range setting 3 specified <u>b15 to b12 b11 to b8 b7 to b4 b3 to b0</u> Он Он СН2 CH1	-	User
ঙ [3]	System area	-	-	-
s [4]	CH1 Industrial shipment settings offset value (used for D/A)	-	-	System
ঙ [5]	CH1 Industrial shipment setting gain value (used for D/A)	_	_	System
ঙ[6]	CH2 Industrial shipment settings offset value (used for D/A)	_	-	System
\$[7]	CH2 Industrial shipment setting gain value (used for D/A)	_	_	System
ঙ[8]	CH1 Industrial shipment settings offset value (used for monitor output)	-	_	System
s [9]	CH1 Industrial shipment settings gain value (used for monitor output)	-	-	System
<u>ি</u> [10]	CH2 Industrial shipment settings offset value (used for monitor output)	-	-	System
<u></u> জ[11]	CH2 Industrial shipment settings gain value (used for monitor output)	-	-	System
s [12]	CH1 User range settings offset value (used for D/A)	_	-	System
<u>ি</u> [13]	CH1 User range settings gain value (used for D/A)	-	-	System
ি [14]	CH2 User range settings offset value (used for D/A)	-	-	System
s [15]	CH2 User range settings gain value (used for D/A)	_	-	System
s [16]	CH1 User range settings offset value (used for monitor output)	-	_	System
s [17]	CH1 User range settings gain value (used for monitor output)	-	_	System
s [18]	CH2 User range settings offset value (used for monitor output)	_	_	System
ি [19]	CH2 User range settings gain value (used for monitor output)	_	_	System

*1 : Set the data only to the Pass data classification setting s [2].

(9) Q66DA-G^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	_
<u>৩</u> [1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
৩ [2]	Pass data classification setting	Specify the user range setting to read the offset/gain values. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified $b_{15}^{b_{12} b_{11}} b_{10}^{b_{10}} b_{9}^{b_{8}} b_{7}^{b_{6}} b_{5}^{b_{5}} b_{4}^{b_{3}} b_{2}^{b_{1}} b_{1}^{b_{1}} b_{1}^{b_{1}}$	0000н to 0АААн	User
\$[3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
<u></u> §[6]	CH2 Industrial shipment settings offset value	-	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
(8)	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	-	-	System
s [10]	CH4 Industrial shipment settings offset value	-	-	System
ঙ [11]	CH4 Industrial shipment settings gain value	-	-	System
s[12]	CH5 Industrial shipment settings offset value	_	-	System
s[13]	CH5 Industrial shipment settings gain value	_	-	System
s[14]	CH6 Industrial shipment settings offset value	_	-	System
<u></u> জ[15]	CH6 Industrial shipment settings gain value	_	-	System
⑤ [16]	CH1 User range settings offset value	_	_	System
⑤ [17]	CH1 User range settings gain value	_	_	System
s [18]	CH2 User range settings offset value	_	-	System
⑤[19]	CH2 User range settings gain value	_	-	System
\$[20]	CH3 User range settings offset value	_	-	System
\$[21]	CH3 User range settings gain value	_	-	System
s[22]	CH4 User range settings offset value	_	-	System
s [23]	CH4 User range settings gain value	_	-	System
s [24]	CH5 User range settings offset value	_	-	System
s [25]	CH5 User range settings gain value	-	-	System
<u>\$</u> [26]	CH6 User range settings offset value	-	_	System
<u>\$[27]</u>	CH6 User range settings gain value	_	_	System
© [28] to	System area	_	_	System
s [35]				

*1 : Set the data only to the Pass data classification setting s [2].

(10) Q64RD/Q64RD-G *1

Control data of Q64RD/Q64RD-G (1/5)

Dev	vice	Item	Setting data	Setting range	Setting side
S	[0]	System area	-	-	-
\$	[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
S	[2]	System area			
\$	[3]		_	_	_
	⑤ [4]	3-wire CH1 Factory default offset value	-	-	System
	<u> </u> (5]	3-wire CH1 Factory default offset value	-	-	System
	\$[6]	3-wire CH1 Factory default gain value	-	-	System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value	-	-	System
QUAND	§[8]	3-wire CH1 User range settings offset value	-	-	System
	⑤ [9]	3-wire CH1 User range settings offset value	-	-	System
	s [10]	3-wire CH1 User range settings gain value	-	-	System
	<u></u> জ[11]	3-wire CH1 User range settings gain value	-	-	System
	⑤ [4]	3-wire CH1 Factory default offset value (L)			Svotom
	s [5]	3-wire CH1 Factory default offset value (H)		-	System
	⑤ [6]	(§) [6] 3-wire CH1 Factory default gain value (L)			System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value (H)		_	System
-G	§ [8]	3-wire CH1 User range settings offset value (L)			System
	⑤ [9]	3-wire CH1 User range settings offset value (H)		_	System
	s [10]	3-wire CH1 User range settings gain value (L)			Svotom
	s[11]	3-wire CH1 User range settings gain value (H)	-	_	System
S	[12]	3-wire CH1 User range settings resistance offset value (L)			Sustam
s	[13]	3-wire CH1 User range settings resistance offset value (H)		-	System
(S)	[14]	3-wire CH1 User range settings resistance gain value (L)			System
S	[15]	3-wire CH1 User range settings resistance gain value (H)	-	-	System
	s [16]	4-wire CH1 Factory default offset value	-	-	System
00100	s[17]	4-wire CH1 Factory default offset value	-	-	System
	s [18]	4-wire CH1 Factory default gain value	-	-	System
	s [19]	4-wire CH1 Factory default gain value	_	-	System
Q64RD	s [20]	4-wire CH1 User range settings offset value	-	_	System
	<u> </u> ⁽³⁾ ⁽²⁾	4-wire CH1 User range settings offset value	-	_	System
	⑤ [22]	4-wire CH1 User range settings gain value	-	_	System
	s [23]	4-wire CH1 User range settings gain value	-	-	System

Other Avire CH1 Factory default offset value (1) - ratiog Stylem OGARD 0 [17] 4-wire CH1 Factory default gain value (1) - - Syslem 0 [18] 4-wire CH1 Factory default gain value (1) - - Syslem 0 [19] 4-wire CH1 User range settings offset value (1) - - Syslem 0 [21] 4-wire CH1 User range settings offset value (1) - - Syslem 0 [22] 4-wire CH1 User range settings offset value (1) - - Syslem 0 [22] 4-wire CH1 User range settings effect value (1) - - Syslem 0 [23] 4-wire CH1 User range settings effect value (1) - - Syslem 0 [24] 4-wire CH1 User range settings effect value (1) - - Syslem 0 [28] 4-wire CH1 User range settings effect value (1) - - Syslem 0 [28] 3-wire CH2 Eactory default effect value (1) - - Syslem 0 [29] 3-wire CH2 Eactory default effect value - - Syslem <t< th=""><th>Dev</th><th>vice</th><th>Item</th><th>Setting data</th><th>Setting</th><th>Setting</th></t<>	Dev	vice	Item	Setting data	Setting	Setting
0.101 4.wire CH1 Factory default offset value (h) - - System 0.118 4.wire CH1 Factory default gain value (L) - - System 0.119 4.wire CH1 Factory default gain value (L) - - System 0.120 4-wire CH1 User range settings offset value (h) - - System 0.121 4-wire CH1 User range settings offset value (h) - - System 0.121 4-wire CH1 User range settings resistance offset value (h) - - System 0.123 4-wire CH1 User range settings resistance offset value (h) - - System 0.123 4-wire CH1 User range settings resistance gain value (h) - - System 0.123 4-wire CH1 User range settings resistance gain value (h) - - System 0.121 4-wire CH1 User range settings resistance gain value (h) - - System 0.123 3-wire CH2 Factory default difter value - - System 0.123 3-wire CH2 Factory default difter value - - System			4-wire CH1 Eactory default offset value (L)		range	side
Operating Operating <t< td=""><td></td><td></td><td></td><td>-</td><td>-</td><td>System</td></t<>				-	-	System
OBJARD O(19) 4-wire CH1 Factory default gain value (h) - - System G (20) 4-wire CH1 User range settings offset value (L) - - System (21) 4-wire CH1 User range settings gain value (L) - - System (21) 4-wire CH1 User range settings gain value (L) - - System (22) 4-wire CH1 User range settings gain value (L) - - System (22) 4-wire CH1 User range settings resistance gain value (L) - - System (22) 4-wire CH1 User range settings resistance gain value (L) - - System (23) 3-wire CH2 Factory default offset value - - System (33) 3-wire CH2 Factory default offset value - - System (33) 3-wire CH2 User range settings offset value - - System (34) 3-wire CH2 User range settings offset value - - System (34) 3-wire CH2 User range settings offset value - - System <t< td=""><td></td><td></td><td>· · · · · ·</td><td></td><td></td><td></td></t<>			· · · · · ·			
G C[20] 4-wire CH1 User range settings offset value (1) - System C[21] 4-wire CH1 User range settings an value (1) - - System C[23] 4-wire CH1 User range settings existance offset value (1) - - System C[23] 4-wire CH1 User range settings resistance offset value (1) - - System C[24] 4-wire CH1 User range settings resistance offset value (1) - - System C[25] 4-wire CH1 User range settings resistance gain value (1) - - System C[28] 4-wire CH1 User range settings resistance gain value (1) - - System C[28] 4-wire CH1 User range settings resistance gain value (1) - - System C[30] 3-wire CH2 Factory default offset value - - System C[31] 3-wire CH2 User range settings offset value - - System C[33] 3-wire CH2 User range settings offset value - - System C[33] 3-wire CH2 User range settings offset value (1) - - <td< td=""><td>00400</td><td></td><td></td><td>_</td><td>-</td><td>System</td></td<>	00400			_	-	System
O [20] +He Chill User range settings offset value (h)						
Ote Organ A-wire CH1 User range settings gain value (L) - System • (22) 4-wire CH1 User range settings gain value (H) - - System • (24) 4-wire CH1 User range settings resistance offset value (L) - - System • (24) 4-wire CH1 User range settings resistance gain value (L) - - System • (28) 4-wire CH1 User range settings resistance gain value (H) - - System • (28) 4-wire CH1 User range settings resistance gain value (H) - - System • (28) 3-wire CH2 Factory default offset value - - System • (30) 3-wire CH2 Factory default gain value - - System • (31) 3-wire CH2 User range settings offset value - - System • (33) 3-wire CH2 User range settings offset value - - System • (34) 3-wire CH2 User range settings offset value (L) - - System • (34) 3-wire CH2 Factory default offset value (L) - - System				_	-	System
Organ 4-wire CH1 User range settings gain value (H) - - System O(24) 4-wire CH1 User range settings resistance offset value (L) - - System O(25) 4-wire CH1 User range settings resistance offset value (L) - - System O(27) 4-wire CH1 User range settings resistance gain value (L) - - System O(28) 4-wire CH2 Factory default offset value - - System O(29) 3-wire CH2 Factory default offset value - - System O(30) 3-wire CH2 Factory default offset value - - System O(31) 3-wire CH2 User range settings offset value - - System O(32) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 User range settings offset value - - System O(124) 3-wire CH2 User range settings offset value - - System O(124) 3-wire CH2 User range settings offset value (L) - - System O(12			· · ·			
O[24] 4-wire CH1 User range settings resistance offset value (L) - - System O[25] 4-wire CH1 User range settings resistance gain value (L) - - System O[27] 4-wire CH1 User range settings resistance gain value (L) - - System O[28] 4-wire CH1 User range settings resistance gain value (H) - - System O[29] 3-wire CH2 Factory default offset value - - System O[30] 3-wire CH2 Factory default gain value - - System O[31] 3-wire CH2 Factory default gain value - - System O[32] 3-wire CH2 Factory default offset value - - System O[33] 3-wire CH2 Factory default offset value - - System O[33] 3-wire CH2 Factory default offset value - - System O[34] 3-wire CH2 Factory default offset value (H) - - System O[213] 3-wire CH2 Factory default gen value (H) - - System O[214]				_	-	System
O[25] 4-wire CH1 User range settings resistance offset value (H) - - System O[26] 4-wire CH1 User range settings resistance gain value (L) - - System O[27] 4-wire CH1 User range settings resistance gain value (H) - - System O[28] 3-wire CH2 Factory default offset value - - System O[30] 3-wire CH2 Factory default gain value - - System O[31] 3-wire CH2 Factory default gain value - - System O[33] 3-wire CH2 Factory default gain value - - System O[34] 3-wire CH2 Factory default gain value - - System O[34] 3-wire CH2 Lear range settings gain value - - System O[35] 3-wire CH2 Factory default offset value (H) - - System O[36] 3-wire CH2 Factory default offset value (L) - - System O[36] 3-wire CH2 Factory default offset value (L) - - System O[37] 3-wire CH						
Op/261 4-wire CH1 User range settings resistance gain value (1) - - System 0[27] 4-wire CH1 User range settings resistance gain value (H) - - System 0[28] 3-wire CH2 Factory default offset value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[30] 3-wire CH2 Factory default offset value (L) - - System 0[31] 3-wire CH2 Eactory default gain value (L) - - System 0[32] 3-wire CH2 User range settings offset value (L) - - System 0[33] 3-wire CH			· · · · · · · · · · · · · · · · · · ·	-	-	System
Other - - System O(27) 4-wire CH1 User range settings resistance gain value (H) - - System O(28) 3-wire CH2 Factory default offset value - - System O(30) 3-wire CH2 Factory default offset value - - System O(31) 3-wire CH2 Factory default gain value - - System O(32) 3-wire CH2 Factory default gain value - - System O(33) 3-wire CH2 User range settings offset value - - System O(34) 3-wire CH2 User range settings gain value - - System O(35) 3-wire CH2 User range settings gain value - - System O(35) 3-wire CH2 Factory default offset value (L) - - System O(30) 3-wire CH2 Factory default gain value (L) - - System O(31) 3-wire CH2 User range settings offset value (L) - - System O(32) 3-wire CH2 User range settings offset value (L) - -						
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O64R0 O.012 3-wire CH2 User range settings offset value - - System ©[32] 3-wire CH2 User range settings offset value - - System ©[34] 3-wire CH2 User range settings gain value - - System ©[35] 3-wire CH2 User range settings gain value - - System ©[28] 3-wire CH2 Factory default offset value (L) - - System ©[30] 3-wire CH2 Factory default gain value (L) - - System ©[31] 3-wire CH2 Factory default gain value (L) - - System ©[31] 3-wire CH2 Factory default gain value (L) - - System ©[32] 3-wire CH2 User range settings offset value (L) - - System ©[33] 3-wire CH2 User range settings gain value (L) - - System ©[34] 3-wire CH2 User range settings resistance offset value (L) - - System ©[35] 3-wire CH2 User range settings resistance gain value (L) - - System		<u>\$</u> [30]		-	-	
Otea System © [33] 3-wire CH2 User range settings offset value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 User range settings gain value - - System © [28] 3-wire CH2 Factory default offset value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (H) - - System © [32] 3-wire CH2 User range settings offset value (L) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [34] 3-wire CH2 User range settings gain value (L) - - System © [35] 3-wire CH2 User range settings offset value (L) - - System © [36] 3-wire CH2 User range settings resistance offset value (H) - -	Q64RD	s [31]	3-wire CH2 Factory default gain value	-	-	System
Otea System Image: System Image: System Image: System<		s [32]	3-wire CH2 User range settings offset value	-	-	System
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Image: Control of Contro		<u>ি</u> [34]	3-wire CH2 User range settings gain value	-	-	System
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G64RD • [29] 3-wire CH2 Factory default offset value (H) - - System • G [31] 3-wire CH2 Factory default gain value (L) - - System • G [31] 3-wire CH2 Factory default gain value (H) - - System • G [32] 3-wire CH2 User range settings offset value (H) - - System • G [33] 3-wire CH2 User range settings gain value (L) - - System • G [33] 3-wire CH2 User range settings gain value (L) - - System • G [36] 3-wire CH2 User range settings gain value (H) - - System • G [36] 3-wire CH2 User range settings gain value (H) - - System • G [37] 3-wire CH2 User range settings resistance offset value (H) - - System • G [38] 3-wire CH2 User range settings resistance gain value (H) - - System • G [39] 3-wire CH2 User range settings resistance gain value (H) - - System • G [39] 3-wire CH2 Eactory d		s [28]	3-wire CH2 Factory default offset value (L)	_		System
O64RD • [31] 3-wire CH2 Factory default gain value (H) - - System • • [31] 3-wire CH2 User range settings offset value (L) - - System • • [33] 3-wire CH2 User range settings offset value (H) - - System • • [33] 3-wire CH2 User range settings gain value (L) - - System • • [36] 3-wire CH2 User range settings gain value (L) - - System • • [36] 3-wire CH2 User range settings resistance offset value (L) - - System • • [36] 3-wire CH2 User range settings resistance offset value (L) - - System • • • • • • • • • • • • • • • • • • •		\$[29]	3-wire CH2 Factory default offset value (H)			Gystern
O64RD ③ [31] 3-wire CH2 Factory default gain value (H) - - System -G ④ [32] 3-wire CH2 User range settings offset value (L) - - System ④ [33] 3-wire CH2 User range settings gain value (L) - - System ④ [34] 3-wire CH2 User range settings gain value (L) - - System ④ [35] 3-wire CH2 User range settings gain value (H) - - System ● [35] 3-wire CH2 User range settings resistance offset value (L) - - System ● [36] 3-wire CH2 User range settings resistance offset value (L) - - System ● [37] 3-wire CH2 User range settings resistance gain value (L) - - System ● [37] 3-wire CH2 User range settings resistance gain value (L) - - System ● [39] 3-wire CH2 User range settings resistance gain value (L) - - System ● [39] 3-wire CH2 User range settings resistance gain value (L) - - System ● [39] 3-wire CH2 Factory default offset value - - System ● [41]		\$[30]	3-wire CH2 Factory default gain value (L)			System
Image: Signal and the one of the other basic range settings offset value (L) - - System Image: Signal and the other basic range settings offset value (H) - - System Image: Signal and the other basic range settings gain value (L) - - System Image: Signal and the other basic range settings gain value (L) - - System Image: Signal and the other basic range settings gain value (H) - - System Image: Signal and the other basic range settings resistance offset value (L) - - System Image: Signal and the other basic range settings resistance offset value (L) - - System Image: Signal and the other basic range settings resistance gain value (L) - - System Image: Signal and the other basic range settings resistance gain value (L) - - System Image: Signal and the other basic range settings resistance gain value (L) - - System Image: Signal and the other basic range settings resistance gain value (L) - - System Image: Signal and the other basic range settings resistance gain value (L) - - System Image: Signal and the other basic range settings offset value	Q64RD	<u></u> §[31]	3-wire CH2 Factory default gain value (H)	_	_	Oystern
S [33] 3-wire CH2 User range settings gain value (H) - - System S [34] 3-wire CH2 User range settings gain value (L) - - System S [36] 3-wire CH2 User range settings gain value (H) - - System S [36] 3-wire CH2 User range settings resistance offset value (L) - - System S [37] 3-wire CH2 User range settings resistance offset value (H) - - System S [38] 3-wire CH2 User range settings resistance gain value (L) - - System S [39] 3-wire CH2 User range settings resistance gain value (H) - - System S [40] 4-wire CH2 User range settings resistance gain value (H) - - System S [41] 4-wire CH2 Factory default offset value - - System S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [41] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 User range settings offset value -	-G	\$ [32]	3-wire CH2 User range settings offset value (L)			Svetom
Sigs 3-wire CH2 User range settings gain value (H) - - System Sigs 3-wire CH2 User range settings resistance offset value (L) - - System Sigs 3-wire CH2 User range settings resistance offset value (H) - - System Sigs 3-wire CH2 User range settings resistance offset value (L) - - System Sigs 3-wire CH2 User range settings resistance gain value (L) - - System Sigs 3-wire CH2 User range settings resistance gain value (H) - - System Sigs 3-wire CH2 User range settings resistance gain value (H) - - System Sigs 3-wire CH2 Eactory default offset value - - System Sigs 4-wire CH2 Factory default offset value - - System Sigs 4-wire CH2 Factory default gain value - - System Sigs 4-wire CH2 Factory default gain value - - System Sigs 4-wire CH2 User range settings offset value - - System Sigs 4-wire CH2 User range settings offset value - - <td></td> <td>s [33]</td> <td>3-wire CH2 User range settings offset value (H)</td> <td>_</td> <td>_</td> <td>System</td>		s [33]	3-wire CH2 User range settings offset value (H)	_	_	System
(§ [35] 3-wire CH2 User range settings gain value (H) - - System (§ [36] 3-wire CH2 User range settings resistance offset value (L) - - System (§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value -		s [34]	3-wire CH2 User range settings gain value (L)			Custom
Sigar 3-wire CH2 User range settings resistance offset value (H) - - System Sigar 3-wire CH2 User range settings resistance gain value (L) - - System Sigar 3-wire CH2 User range settings resistance gain value (L) - - System Sigar 3-wire CH2 User range settings resistance gain value (H) - - System Sigar 3-wire CH2 User range settings resistance gain value (H) - - System Sigar 4-wire CH2 Factory default offset value - - System Sigar 4-wire CH2 Factory default offset value - - System Sigar 4-wire CH2 Factory default gain value - - System Sigar 4-wire CH2 Factory default gain value - - System Sigar 4-wire CH2 Factory default gain value - - System Sigar 4-wire CH2 User range settings offset value - - System Sigar 4-wire CH2 User range settings offset value - - System Sigar 4-wire CH2 User range settings offset value - -		\$ [35]	3-wire CH2 User range settings gain value (H)	_	-	System
(§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value - - System	S	[36]	3-wire CH2 User range settings resistance offset value (L)			Quarterin
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(S)[39] 3-wire CH2 User range settings resistance gain value (H) - - System (S)[40] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[42] 4-wire CH2 Factory default gain value - - System (S)[42] 4-wire CH2 Factory default gain value - - System (S)[43] 4-wire CH2 Factory default gain value - - System (S)[44] 4-wire CH2 User range settings offset value - - System (S)[44] 4-wire CH2 User range settings offset value - - System (S)[45] 4-wire CH2 User range settings offset value - - System (S)[46] 4-wire CH2 User range settings gain value - - System	S	[38]	3-wire CH2 User range settings resistance gain value (L)			Quarterin
Q64RD	S	[39]	3-wire CH2 User range settings resistance gain value (H)	_	-	System
Q64RD		<u>\$</u> [40]	4-wire CH2 Factory default offset value	_	-	System
S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [44] 4-wire CH2 User range settings offset value - - System S [45] 4-wire CH2 User range settings offset value - - System S [46] 4-wire CH2 User range settings gain value - - System		<u>\$</u> [41]	4-wire CH2 Factory default offset value	_	_	System
Image: Second			4-wire CH2 Factory default gain value	-	-	System
Q64RD			4-wire CH2 Factory default gain value	_	_	System
(\$ [45] 4-wire CH2 User range settings offset value - - System (\$ [46] 4-wire CH2 User range settings gain value - - System	Q64RD		4-wire CH2 User range settings offset value	_	_	System
Image: Second			4-wire CH2 User range settings offset value	_	_	System
				_	_	-
		⑤[47]	4-wire CH2 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (2/5)

De	vice	Item	Setting data	Setting range	Setting side
	s [40]	4-wire CH2 Factory default offset value (L)		range	olde
	⑤[41]	4-wire CH2 Factory default offset value (H)	-	-	System
	<u>\$[42]</u>	4-wire CH2 Factory default gain value (L)			
Q64RD	<u> </u>	4-wire CH2 Factory default gain value (H)	-	-	System
-G	<u> </u>	4-wire CH2 User range settings offset value (L)			
	<u>\$</u> [45]	4-wire CH2 User range settings offset value (H)	-	-	System
	<u>\$</u> [46]	4-wire CH2 User range settings gain value (L)			
	<u>\$</u> [47]	4-wire CH2 User range settings gain value (H)	-	-	System
s	[48]	4-wire CH2 User range settings resistance offset value (L)			
	[49]	4-wire CH2 User range settings resistance offset value (H)	-	-	System
	[50]	4-wire CH2 User range settings resistance gain value (L)			
5	[51]	4-wire CH2 User range settings resistance gain value (H)	-	-	System
	\$[52]	3-wire CH3 Factory default offset value	-	_	System
	s [53]	3-wire CH3 Factory default offset value	_	-	System
	\$[54]	3-wire CH3 Factory default gain value	-	_	System
00400	\$ [55]	3-wire CH3 Factory default gain value	_	-	System
Q64RD	§ [56]	3-wire CH3 User range settings offset value	-	-	System
	§[57]	3-wire CH3 User range settings offset value	-	-	System
	§ [58]	3-wire CH3 User range settings gain value	-	-	System
	s [59]	3-wire CH3 User range settings gain value	_	-	System
	§ [52]	3-wire CH3 Factory default offset value (L)			Quatan
	\$ [53]	3-wire CH3 Factory default offset value (H)	-	_	System
	s [54]	3-wire CH3 Factory default gain value (L)			Suctors
Q64RD	s [55]	3-wire CH3 Factory default gain value (H)	-	_	System
-G	s [56]	3-wire CH3 User range settings offset value (L)			Sustam
	s [57]	3-wire CH3 User range settings offset value (H)	-	_	System
	s [58]	3-wire CH3 User range settings gain value (L)			Queters
	s [59]	3-wire CH3 User range settings gain value (H)	-	_	System
s	[60]	3-wire CH3 User range settings resistance offset value (L)			System
S	[61]	3-wire CH3 User range settings resistance offset value (H)	-	_	System
\$	[62]	3-wire CH3 User range settings resistance gain value (L)			System
\$	[63]	3-wire CH3 User range settings resistance gain value (H)	-	_	System
	\$[64]	4-wire CH3 Factory default offset value	-	-	System
	s [65]	4-wire CH3 Factory default offset value	-	-	System
	s [66]	4-wire CH3 Factory default gain value	-	-	System
Q64RD	\$[67]	4-wire CH3 Factory default gain value	-	-	System
QUHRD	§ [68]	4-wire CH3 User range settings offset value	-	-	System
	s [69]	4-wire CH3 User range settings offset value	-	-	System
	s [70]	4-wire CH3 User range settings gain value	-	-	System
	ঙ [71]	4-wire CH3 User range settings gain value	-	-	System

Control data of Q64RD/Q64RD-G (3/5)

O[64] 4-wire CH3 Factory default offset value (1) - Color System 068RD 0[66] 4-wire CH3 Factory default gain value (1) - - System 0 0[67] 4-wire CH3 Factory default gain value (1) - - System 0 0[67] 4-wire CH3 User range settings offset value (1) - - System 0 0[68] 4-wire CH3 User range settings offset value (1) - - System 0 168 4-wire CH3 User range settings offset value (1) - - System 0 7/71 4-wire CH3 User range settings resistance date value (1) - - System 0 7/71 4-wire CH3 User range settings resistance date value (1) - - System 0 7/71 4-wire CH3 User range settings resistance date value (1) - - System 0 7/73 4-wire CH3 User range settings date value (1) - - System 0 7/73 3-wire CH4 Factory default diftet value - - System	Dev	vice	Item	Setting data	Setting	Setting
068 4-wire CH3 Factory default diffest value (1) - - System 068 4-wire CH3 Factory default gain value (1) - - System 068 4-wire CH3 Factory default gain value (1) - - System 0680 4-wire CH3 User range settings offset value (1) - - System 071 4-wire CH3 User range settings gain value (1) - - System 0721 4-wire CH3 User range settings resistance offset value (1) - - System 0723 4-wire CH3 User range settings resistance offset value (1) - - System 073 4-wire CH3 User range settings resistance offset value (1) - - System 074 4-wire CH3 User range settings resistance offset value (1) - - System 0773 4-wire CH3 User range settings offset value (1) - - System 0773 4-wire CH3 User range settings offset value - - System 0774 4-wire CH3 User range settings offset value - - System			4-wire CH3 Eactory default offset value (L)		range	side
Observe Observe System 0 (68) 4-wire CH3 Factory default gain value (1) - - System 0 (68) 4-wire CH3 Factory default gain value (1) - - System 0 (68) 4-wire CH3 User range settings offset value (1) - - System 0 (70) 4-wire CH3 User range settings gain value (1) - - System 0 (72) 4-wire CH3 User range settings resistance offset value (1) - - System 0 (72) 4-wire CH3 User range settings resistance offset value (1) - - System 0 (77) 4-wire CH3 User range settings resistance gain value (1) - - System 0 (77) 4-wire CH4 Factory default offset value - - System 0 (77) 3-wire CH4 Factory default gain value - - System 0 (78) 3-wire CH4 Eactory default offset value - - System 0 (78) 3-wire CH4 User range settin			· · · · · · · · · · · · · · · · · · ·	-	-	System
OBJARD (i) [87] 4-wire CH3 Factory default gain value (1) - - System (i) [89] 4-wire CH3 User range settings offset value (1) - - System (i) [89] 4-wire CH3 User range settings gain value (1) - - System (i) [70] 4-wire CH3 User range settings gain value (1) - - System (i) [71] 4-wire CH3 User range settings gain value (1) - - System (i) [72] 4-wire CH3 User range settings resistance offset value (1) - - System (i) [73] 4-wire CH3 User range settings resistance gain value (1) - - System (i) [74] 4-wire CH4 User range settings resistance gain value (1) - - System (i) [75] 4-wire CH4 User range settings offset value - - System (i) [76] 3-wire CH4 Factory default offset value - - System (i) [78] 3-wire CH4 Eactory default gain value - - System (i) [78] 3-wire CH4 User range settings offset value - -			· · · · · ·			
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Oteo						
C(70) 4-wire CH3 User range settings gain value (L) - System 0(71) 4-wire CH3 User range settings gain value (H) - - System 0(72) 4-wire CH3 User range settings resistance offset value (L) - - System 0(73) 4-wire CH3 User range settings resistance offset value (H) - - System 0(76) 4-wire CH3 User range settings resistance gain value (H) - - System 0(76) 4-wire CH4 Eactory default offset value - - System 0(77) 4-wire CH4 Factory default gain value - - System 0(77) 3-wire CH4 Factory default gain value - - System 0(77) 3-wire CH4 Factory default gain value - - System 0(78) 3-wire CH4 User range settings offset value - - System 0(80) 3-wire CH4 User range settings offset value - - System 0(81) 3-wire CH4 User range settings offset value (L) - - System 0(77) 3-wire CH4			· · · · · · · · · · · · · · · · · · ·	-	-	System
Other System O(71) 4-wire CH3 User range settings gain value (h) - - System O(72) 4-wire CH3 User range settings resistance offset value (i.) - - System O(73) 4-wire CH3 User range settings resistance offset value (h) - - System O(74) 4-wire CH3 User range settings resistance gain value (h) - - System O(77) 4-wire CH3 Exer range settings resistance gain value (h) - - System O(77) 3-wire CH4 Factory default offset value - - System O(77) 3-wire CH4 Factory default gain value - - System O(78) 3-wire CH4 User range settings offset value - - System O(80) 3-wire CH4 User range settings offset value - - System O(81) 3-wire CH4 User range settings offset value - - System O(76) 3-wire CH4 Factory default gain value - - System O(77) 3-wire CH4 Factory default gain value (l) - <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>						
O[72] 4-wire CH3 User range settings resistance offset value (L) - System O[73] 4-wire CH3 User range settings resistance offset value (H) - - System O[76] 4-wire CH3 User range settings resistance gain value (L) - - System O[75] 4-wire CH3 User range settings resistance gain value (H) - - System O[76] 3-wire CH4 Factory default offset value - - System O[77] 3-wire CH4 Factory default gain value - - System O[78] 3-wire CH4 Factory default gain value - - System O[80] 3-wire CH4 Factory default gain value - - System O[81] 3-wire CH4 User range settings gain value - - System O[82] 3-wire CH4 Factory default offset value (L) - - System O[83] 3-wire CH4 Factory default offset value (L) - - System O[77] 3-wire CH4 Factory default offset value (L) - - System O[78] 3-wire				-	-	System
OLV3 4-wire CH3 User range settings resistance offset value (h) - - System O[73] 4-wire CH3 User range settings resistance gain value (L) - - System O[75] 4-wire CH3 User range settings resistance gain value (H) - - System O[76] 3-wire CH4 Factory default offset value - - System O[77] 3-wire CH4 Factory default gain value - - System O[77] 3-wire CH4 Factory default gain value - - System O[78] 3-wire CH4 Factory default gain value - - System O[80] 3-wire CH4 Factory default gain value - - System O[81] 3-wire CH4 User range settings gain value - - System O[82] 3-wire CH4 Factory default offset value (L) - - System O[83] 3-wire CH4 Factory default offset value (L) - - System O[76] 3-wire CH4 Factory default offset value (L) - - System O[778] 3-wire CH						
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Op/751 4-wire CH3 User range settings resistance gain value (H) - - System O(76) 3-wire CH4 Factory default offset value - - System O(77) 3-wire CH4 Factory default gain value - - System O(77) 3-wire CH4 Factory default gain value - - System O(78) 3-wire CH4 Factory default gain value - - System O(84RD 3-wire CH4 Factory default gain value - - System O(81) 3-wire CH4 User range settings offset value - - System O(81) 3-wire CH4 User range settings gain value - - System O(82) 3-wire CH4 User range settings gain value - - System O(76) 3-wire CH4 Factory default gain value (L) - - System O(77) 3-wire CH4 User range settings offset value (L) - - System O(78) 3-wire CH4 User range settings offset value (L) - - System O(80) 3-wire CH4 User range settings						
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Of [78] 3-wire CH4 Factory default gain value - - System O([79] 3-wire CH4 Factory default gain value - - System O([90] 3-wire CH4 User range settings offset value - - System O([81] 3-wire CH4 User range settings gain value - - System O([82] 3-wire CH4 User range settings gain value - - System O([83] 3-wire CH4 User range settings gain value - - System O([76] 3-wire CH4 User range settings gain value - - System O([76] 3-wire CH4 Factory default offset value (L) - - System O([77] 3-wire CH4 User range settings offset value (L) - - System O([78] 3-wire CH4 User range settings offset value (L) - - System O([80] 3-wire CH4 User range settings resistance offset value (L) - - System O([81] 3-wire CH4 User range settings resistance offset value (L) - - System O([81]				-	-	-
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(a) [b) 0-wire CH4 User range settings offset value (H) - - System (a) [81] 3-wire CH4 User range settings gain value (L) - - System (a) [82] 3-wire CH4 User range settings gain value (L) - - System (a) [83] 3-wire CH4 User range settings resistance offset value (L) - - System (a) [85] 3-wire CH4 User range settings resistance offset value (L) - - System (a) [86] 3-wire CH4 User range settings resistance offset value (L) - - System (a) [86] 3-wire CH4 User range settings resistance gain value (L) - - System (a) [86] 3-wire CH4 User range settings resistance gain value (H) - - System (b) [86] 3-wire CH4 User range settings resistance gain value (H) - - System (b) [86] 4-wire CH4 Factory default offset value - - System (b) [89] 4-wire CH4 Factory default offset value - - System (b) [90] 4-wire CH4 Factory default gain value - - System (c) [91] 4-wire CH4 User ra	Q64RD	s [79]	3-wire CH4 Factory default gain value (H)			Cycloni
S[81] 3-wire CH4 User range settings gain value (H) - - System S[82] 3-wire CH4 User range settings gain value (L) - - System S[84] 3-wire CH4 User range settings resistance offset value (L) - - System S[85] 3-wire CH4 User range settings resistance offset value (L) - - System S[85] 3-wire CH4 User range settings resistance offset value (H) - - System S[86] 3-wire CH4 User range settings resistance gain value (L) - - System S[86] 3-wire CH4 User range settings resistance gain value (L) - - System S[87] 3-wire CH4 User range settings resistance gain value (H) - - System S[88] 4-wire CH4 Factory default offset value - - System S[89] 4-wire CH4 Factory default offset value - - System S[90] 4-wire CH4 Factory default gain value - - System S[91] 4-wire CH4 Factory default gain value - - System S[92] 4-wire CH4 User range settings offset value -	-G	s [80]	3-wire CH4 User range settings offset value (L)	_		System
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S [85] 3-wire CH4 User range settings resistance offset value (H) - - System S [86] 3-wire CH4 User range settings resistance gain value (L) - - System S [87] 3-wire CH4 User range settings resistance gain value (H) - - System S [87] 3-wire CH4 User range settings resistance gain value (H) - - System S [87] 3-wire CH4 Factory default offset value - - System S [88] 4-wire CH4 Factory default offset value - - System S [89] 4-wire CH4 Factory default offset value - - System S [90] 4-wire CH4 Factory default gain value - - System S [90] 4-wire CH4 Factory default gain value - - System S [91] 4-wire CH4 User range settings offset value - - System S [92] 4-wire CH4 User range settings offset value - - System S [93] 4-wire CH4 User range settings offset value - - System S [94] 4-wire CH4 User range settings gain value - -		\$ [83]	3-wire CH4 User range settings gain value (H)	_	-	System
(\$)[85] 3-wire CH4 User range settings resistance offset value (H) - - System (\$)[86] 3-wire CH4 User range settings resistance gain value (L) - - System (\$)[87] 3-wire CH4 User range settings resistance gain value (H) - - System (\$)[87] 3-wire CH4 User range settings resistance gain value (H) - - System (\$)[87] 3-wire CH4 Factory default offset value - - System (\$)[89] 4-wire CH4 Factory default offset value - - System (\$)[90] 4-wire CH4 Factory default gain value - - System (\$)[91] 4-wire CH4 Factory default gain value - - System (\$)[92] 4-wire CH4 User range settings offset value - - System (\$)[93] 4-wire CH4 User range settings offset value - - System (\$)[94] 4-wire CH4 User range settings gain value - - System	ঙ	[84]	3-wire CH4 User range settings resistance offset value (L)			System
S[87] 3-wire CH4 User range settings resistance gain value (H) - - System S[87] 3-wire CH4 User range settings resistance gain value (H) - - System S[88] 4-wire CH4 Factory default offset value - - System S[89] 4-wire CH4 Factory default offset value - - System S[90] 4-wire CH4 Factory default gain value - - System S[90] 4-wire CH4 Factory default gain value - - System S[91] 4-wire CH4 Factory default gain value - - System S[92] 4-wire CH4 User range settings offset value - - System S[93] 4-wire CH4 User range settings offset value - - System S[93] 4-wire CH4 User range settings offset value - - System S[94] 4-wire CH4 User range settings gain value - - System	ঙ	[85]	3-wire CH4 User range settings resistance offset value (H)	_	-	System
Image: Sign state in the second sta	ঙ	[86]	3-wire CH4 User range settings resistance gain value (L)			Svotom
Q64RD	S	[87]	3-wire CH4 User range settings resistance gain value (H)	-	_	System
Q64RD [©] [90] ⁴ -wire CH4 Factory default gain value ⁻ ⁻ ⁻ ^S [91] ⁴ -wire CH4 Factory default gain value ⁻ ⁻ ⁻ ^S [92] ⁴ -wire CH4 Factory default gain value ⁻ ⁻ ⁻ ^S [92] ⁴ -wire CH4 Vser range settings offset value ⁻ ⁻ ^S [93] ⁴ -wire CH4 User range settings offset value ⁻ ⁻ ^S [93] ⁴ -wire CH4 User range settings offset value ⁻ ⁻ ^S [94] ⁴ -wire CH4 User range settings gain value ⁻ ⁻ ^S [94] ¹		s [88]	4-wire CH4 Factory default offset value	_	-	System
Q64RD ⁽⁵⁾ [91] ⁽⁴⁾ ⁽¹⁾		s [89]	4-wire CH4 Factory default offset value	-	-	System
Q64RD		s [90]	4-wire CH4 Factory default gain value	-	_	System
Q64RD [©] [92] ⁴ -wire CH4 User range settings offset value [–]	00455	⑤[91]	4-wire CH4 Factory default gain value	_	_	System
(s) [93] 4-wire CH4 User range settings offset value - - System (s) [94] 4-wire CH4 User range settings gain value - - System	Q64RD		4-wire CH4 User range settings offset value	_	-	System
(s) [94] 4-wire CH4 User range settings gain value – – System			4-wire CH4 User range settings offset value	_	-	System
		_	4-wire CH4 User range settings gain value	_	-	System
		<u> </u>	4-wire CH4 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (4/5)

Dev	vice	Item	Setting data	Setting range	Setting side
	S [88]	4-wire CH4 Factory default offset value (L)	_	_	System
	s [89]	4-wire CH4 Factory default offset value (H)		_	Gystern
	s [90]	4-wire CH4 Factory default gain value (L)		_	System
Q64RD	s [91]	4-wire CH4 Factory default gain value (H)			Cycloni
-G	s [92]	4-wire CH4 User range settings offset value (L)	_	_	System
	s [93]	4-wire CH4 User range settings offset value (H)			Cyclem
	s [94]	4-wire CH4 User range settings gain value (L)	_	_	System
	s [95]	4-wire CH4 User range settings gain value (H)			Cyclom
S	[96]	4-wire CH4 User range settings resistance offset value (L)	_	_	System
S	[97]	4-wire CH4 User range settings resistance offset value (H)			Cycloni
S	[98]	4-wire CH4 User range settings resistance gain value (L)	_	_	System
S	[99]	4-wire CH4 User range settings resistance gain value (H)			Cyclem

Control data of Q64RD/Q64RD-G (5/5)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(11) Q64TD/Q64TDV-GH *1

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	Sustan and			
s [3]	System area	_	-	-
§ [4]	CH1 Factory default offset value	_	-	System
<u></u> ال	CH1 Factory default gain value	-	-	System
⑤[6]	CH1 User range settings offset value	-	-	System
⑤ [7]	CH1 User range settings gain value	-	-	System
⑤[8]	CH1 User range settings thermal EMF offset value (L)	_	_	System
⑤ [9]	CH1 User range settings thermal EMF offset value (H)	_		Oystem
s [10]	CH1 User range settings thermal EMF gain value (L)	_	_	System
s[11]	CH1 User range settings thermal EMF gain value (H)	_		Oystem
s [12]	CH2 Factory default offset value	-	-	System
⑤ [13]	CH2 Factory default gain value	-	-	System
⑤ [14]	CH2 User range settings offset value	_	-	System
S [15]	CH2 User range settings gain value	-	-	System
s [16]	CH2 User range settings thermal EMF offset value (L)	_	_	System
S[17]	CH2 User range settings thermal EMF offset value (H)			eyetein
s [18]	CH2 User range settings thermal EMF gain value (L)	_	_	System
s [19]	CH2 User range settings thermal EMF gain value (H)			e jetem
<u></u> জ [20]	CH3 Factory default offset value	_	-	System
<u>ি</u> [21]	CH3 Factory default gain value	_	-	System
s [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
<u></u> ال	CH3 User range settings thermal EMF offset value (L)	_	_	System
s [25]	CH3 User range settings thermal EMF offset value (H)			.,
s [26]	CH3 User range settings thermal EMF gain value (L)	_	_	System
s [27]	CH3 User range settings thermal EMF gain value (H)			
S [28]	CH4 Factory default offset value	_	-	System
s [29]	CH4 Factory default gain value	_	-	System
⑤ [30]	CH4 User range settings offset value	-	-	System
<u></u> জ[31]	CH4 User range settings gain value	-	-	System
\$[32]	CH4 User range settings thermal EMF offset value (L)	_	_	System
ি [33]	CH4 User range settings thermal EMF offset value (H)			,
ি [34]	CH4 User range settings thermal EMF gain value (L)	_	_	System
s [35]	CH4 User range settings thermal EMF gain value (H)			,

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(12) Q68TD-G-H02(H01)^{*1}

Control data of Q68TD-G-H02(H01) (1/2)

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	-	-	-
		The instruction completion status is stored.		
s[1]	Completion status	0 :Normal completion Other than 0 :Error completion	-	System
		(error code)		
⑤[2]	Ourtern and			
s [3]	System area	_	-	_
s[4]	CH1 Factory default offset value	_	-	System
⑤ [5]	CH1 Factory default gain value	_	-	System
⑤[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤[8]	CH1 User range settings thermal EMF offset value (L)			Sustam
s [9]	CH1 User range settings thermal EMF offset value (H)	_	-	System
<u>©</u> [10]	CH1 User range settings thermal EMF gain value (L)			Sustam
⑤ [11]	CH1 User range settings thermal EMF gain value (H)		-	System
S [12]	CH2 Factory default offset value	_	-	System
⑤ [13]	CH2 Factory default gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
<u></u> ال	CH2 User range settings gain value	_	-	System
⑤ [16]	CH2 User range settings thermal EMF offset value (L)			Custom
\$[17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
s [18]	CH2 User range settings thermal EMF gain value (L)			Custom
s [19]	CH2 User range settings thermal EMF gain value (H)	_	-	System
s [20]	CH3 Factory default offset value	_	-	System
s [21]	CH3 Factory default gain value	-	-	System
s [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)			Custom
s [25]	CH3 User range settings thermal EMF offset value (H)	_	-	System
s [26]	CH3 User range settings thermal EMF gain value (L)			Custom
s [27]	CH3 User range settings thermal EMF gain value (H)	_	-	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	-	-	System
s [31]	CH4 User range settings gain value	_	-	System
⑤ [32]	CH4 User range settings thermal EMF offset value (L)			Curcha m
⑤ [33]	CH4 User range settings thermal EMF offset value (H)	1 -	-	System
⑤ [34]	CH4 User range settings thermal EMF gain value (L)			0
⑤[35]	CH4 User range settings thermal EMF gain value (H)	1 -	-	System
⑤[36]	CH5 Factory default offset value	_	-	System
⑤[37]	CH5 Factory default gain value	_	_	System
⑤[38]	CH5 User range settings offset value	_	-	System
<u>\$</u> [39]	CH5 User range settings gain value	_	-	System
<u>\$</u> [40]	CH5 User range settings thermal EMF offset value (L)			
<u>\$[</u> 41]	CH5 User range settings thermal EMF offset value (H)	-	-	System

Device	Item	Setting data	Setting range	Setting side
s [42]	CH5 User range settings thermal EMF gain value (L)			System
⑤ [43]	CH5 User range settings thermal EMF gain value (H)	_	_	System
\$[44]	CH6 Factory default offset value	-	-	System
<u></u> ال	CH6 Factory default gain value	-	-	System
⑤ [46]	CH6 User range settings offset value	-	-	System
⑤ [47]	CH6 User range settings gain value	-	-	System
⑤ [48]	CH6 User range settings thermal EMF offset value (L)			System
s [49]	CH6 User range settings thermal EMF offset value (H)	_	_	System
s [50]	CH6 User range settings thermal EMF gain value (L)	_	_	System
ঙ [51]	CH6 User range settings thermal EMF gain value (H)			Oystem
s [52]	CH7 Factory default offset value	-	-	System
<u></u> ال	CH7 Factory default gain value	-	-	System
s [54]	CH7 User range settings offset value	-	-	System
s [55]	CH7 User range settings gain value	-	-	System
s [56]	CH7 User range settings thermal EMF offset value (L)	_	_	System
s [57]	CH7 User range settings thermal EMF offset value (H)			Oystem
<u>\$</u> [58]	CH7 User range settings thermal EMF gain value (L)	_	_	System
ঙ [59]	CH7 User range settings thermal EMF gain value (H)	_		Oystem
s [60]	CH8 Factory default offset value	-	-	System
s [61]	CH8 Factory default gain value	-	-	System
\$ [62]	CH8 User range settings offset value	-	-	System
\$ [63]	CH8 User range settings gain value	-	-	System
\$[64]	CH8 User range settings thermal EMF offset value (L)			System
\$[65]	CH8 User range settings thermal EMF offset value (H)	_	_	Gystelli
\$[66]	CH8 User range settings thermal EMF gain value (L)			System
s[67]	CH8 User range settings thermal EMF gain value (H)	-	_	System

Control data of Q68TD-G-H02(H01) (2/2)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(13) Q68RD3-G^{*1}

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
§[2] §[3]	System area	-	_	-
⑤ [4]	CH1 Factory default offset value	-	-	System
s [5]	CH1 Factory default gain value	-	-	System
⑤ [6]	CH1 User range settings offset value	-	-	System
S [7]	CH1 User range settings gain value	-	-	System
§ [8]	CH1 User range settings resistance offset value (L)			Custom
s [9]	CH1 User range settings resistance offset value (H)	-	_	System
s [10]	CH1 User range settings resistance gain value (L)			Custom
\$[11]	CH1 User range settings resistance gain value (H)	1 -	_	System
\$ [12]	CH2 Factory default offset value	_	_	System
s [13]	CH2 Factory default gain value	-	-	System
s [14]	CH2 User range settings offset value	-	-	System
s [15]	CH2 User range settings gain value	-	-	System
s [16]	CH2 User range settings resistance offset value (L)			Custom
⑤ [17]	CH2 User range settings resistance offset value (H)	1 -	_	System
⑤ [18]	CH2 User range settings resistance gain value (L)			Custom
⑤ [19]	CH2 User range settings resistance gain value (H)	1 -	_	System
s [20]	CH3 Factory default offset value	-	-	System
s[21]	CH3 Factory default gain value	-	-	System
⑤ [22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
s [24]	CH3 User range settings resistance offset value (L)			Sustam
s [25]	CH3 User range settings resistance offset value (H)	1 -	_	System
s [26]	CH3 User range settings resistance gain value (L)			System
s[27]	CH3 User range settings resistance gain value (H)	1 -	_	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
S[31]	CH4 User range settings gain value	-	-	System
\$ [32]	CH4 User range settings resistance offset value (L)			System
s [33]	CH4 User range settings resistance offset value (H)		_	System
<u></u> ال	CH4 User range settings resistance gain value (L)			System
s [35]	CH4 User range settings resistance gain value (H)		_	Gystelli
s [36]	CH5 Factory default offset value	-	-	System
\$[37]	CH5 Factory default gain value	-	-	System
\$[38]	CH5 User range settings offset value	-	-	System
s [39]	CH5 User range settings gain value	-	-	System
s [40]	CH5 User range settings resistance offset value (L)			Svotom
⑤ [41]	CH5 User range settings resistance offset value (H)	1 -	_	System

Device	Item	Setting data	Setting range	Setting side
s[42]	CH5 User range settings resistance gain value (L)			System
s [43]	CH5 User range settings resistance gain value (H)	_	_	System
\$[44]	CH6 Factory default offset value	_	-	System
ঙ [45]	CH6 Factory default gain value	_	-	System
\$ [46]	CH6 User range settings offset value	_	-	System
ঙ [47]	CH6 User range settings gain value	_	-	System
\$[48]	CH6 User range settings resistance offset value (L)			System
\$ [49]	CH6 User range settings resistance offset value (H)	_	_	System
\$ [50]	CH6 User range settings resistance gain value (L)	_	_	System
<u></u> \$[51]	CH6 User range settings resistance gain value (H)			Oystem
ি [52]	CH7 Factory default offset value	_	-	System
ি [53]	CH7 Factory default gain value	_	-	System
ি [54]	CH7 User range settings offset value	_	-	System
\$ [55]	CH7 User range settings gain value	_	-	System
\$ [56]	CH7 User range settings resistance offset value (L)	_	_	System
\$[57]	CH7 User range settings resistance offset value (H)			Oystem
ি [58]	CH7 User range settings resistance gain value (L)			System
s [59]	CH7 User range settings resistance gain value (H)	_	_	System
s [60]	CH8 Factory default offset value	_	-	System
s[61]	CH8 Factory default gain value	_	-	System
s [62]	CH8 User range settings offset value	_	-	System
s [63]	CH8 User range settings gain value	_	-	System
§[64]	CH8 User range settings resistance offset value (L)		_	System
§ [65]	CH8 User range settings resistance offset value (H)	_	_	Gystem
§[66]	CH8 User range settings resistance gain value (L)		_	System
§[67]	CH8 User range settings resistance gain value (H)	_	_	System

Control data of Q68RD3-G (2/2)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(14) Q61LD^{*1}

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	System
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
\$[2] \$[3]	System area	-	_	System
⑤ [4]	Load cell rated capacity (L)	-	-	System
s [5]	Load cell rated capacity (H)	-	-	System
⑤[6]	Load cell rated output	-	-	System
⑤ [7]	Number of load cells in connection	-	-	System
\$[8]	Zero offset	-	-	System
s [9]	System area	-	-	System
s [10]	Maximum weighing capacity setting (L)	-	-	System
<u>জ</u> [11]	Maximum weighing capacity setting (H)	-	-	System
s [12]	Minimum division	-	-	System
<u>©</u> [13]	Decimal point position	-	-	System
⑤ [14]	Unit	-	-	System
<u> </u> [15]	System area	-	-	System
s [16]	Standard weight setting (L)	_	-	System
s [17]	Standard weight setting (H)	_	_	System
⑤ [18]	Installation site gravitational acceleration (L)	_	-	System
s [19]	Installation site gravitational acceleration (H)	_	_	System
<u>\$</u> [20]	Calibration site gravitational acceleration (L)	_	-	System
s[21]	Calibration site gravitational acceleration (H)	_	-	System
§[22]	Digital output zero correction value (L)	_	-	System
s [23]	Digital output zero correction value (H)	_	_	System
s [24]	Digital output span correction value (L)	_	_	System
§ [25]	Digital output span correction value (H)	_	-	System
 (\$) [26] to (\$) [33] 	System area	-	_	System
\$[34]	Instrumentation amplifier gain setting	_	-	System
s [35]	A/D converter gain setting	_	_	System
\$ [36]	Zero offset output value (L)	_	-	System
\$[37]	Zero offset output value (H)	_	-	System
\$ [38]	Two-point zero calibration value (L)	_	_	System
\$ [39]	Two-point zero calibration value (H)	_	-	System
<u> </u>	Two-point span calibration value (L)	_	-	System
<u> </u>	Two-point span calibration value (H)	-	-	System
(§ [42]) to (§ [53])	System area	-	_	System
[53] [54]	1.0mV/V zero calibration value (L)	_	_	System
(55) (55)	1.0mV/V zero calibration value (H)	_		System

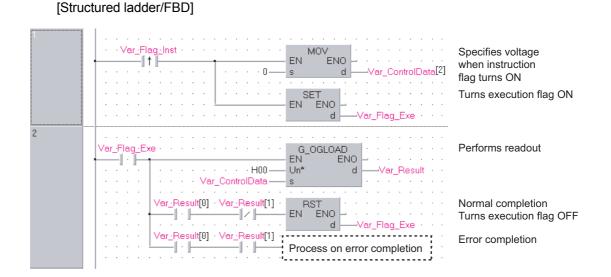
Control data of Q61LD (2/2)

Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
\$[57]	1.0mV/V span calibration value (H)	_	-	System
\$ [58]	2.0mV/V zero calibration value (L)	_	-	System
\$ [59]	2.0mV/V zero calibration value (H)	_	-	System
\$[60]	2.0mV/V span calibration value (L)	_	-	System
s [61]	2.0mV/V span calibration value (H)	_	-	System
§ [62]	3.0mV/V zero calibration value (L)	_	-	System
s [63]	3.0mV/V zero calibration value (H)	_	-	System
§[64]	3.0mV/V span calibration value (L)	_	-	System
s [65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
<u></u> [85]				

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

Program Example

The following program reads out the offset/gain value of the A/D converter module mounted on the I/O numbers from X/Y00 to X/Y0F when the flag turns ON.

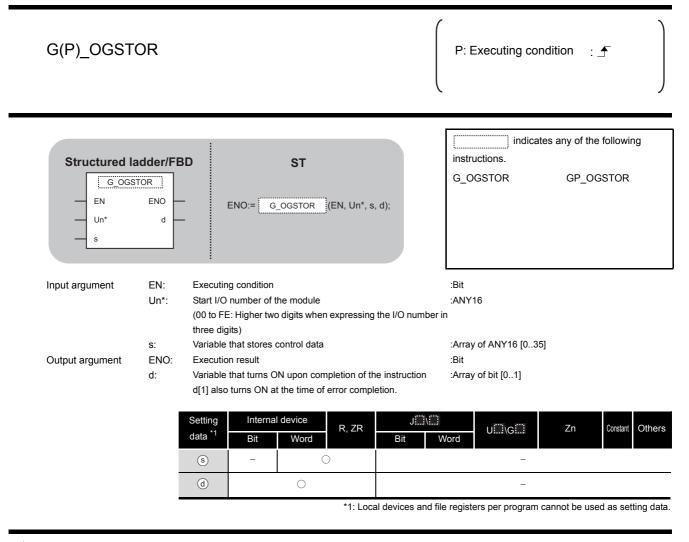


[ST]

IF(Var_Flag_Inst=TRUE)THEN (* Instruction flag ON *) -----MOV(TRUE,0,Var_ControlData[2]); (* Specifies voltage *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var_Flag_Exe=TRUE)THEN (* Execution flag ON *) G_OGLOAD(TRUE, H00, Var_ControlData, Var_Result); (* Performs readout *) IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) RST(TRUE, Var Flag Exe); (* Turns execution flag OFF *) ELSE (* Error completion *) Process on error completion *) END IF; END_IF; END_IF;

5.1.3 OGSTOR instruction

G_OGSTOR



Grant Function

This instruction restores the user range settings offset/gain values stored in the programmable controller CPU to the analog modules.

Control Data

(1) Q64AD/Q64DAN/Q64DA/Q64DAH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ি [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH4 CH3 CH2 CH1	0000н to 000Fн	System
ঙ[3]	System area	-	-	-
ি [4]	CH1 Industrial shipment settings offset value	-	-	System
<u></u> (5]	CH1 Industrial shipment settings gain value	-	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
ঙ[7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	-	-	System
s [10]	CH4 Industrial shipment settings offset value	-	-	System
ি [11]	CH4 Industrial shipment settings gain value	-	-	System
<u>ি</u> [12]	CH1 User range settings offset value	-	-	System
ি [13]	CH1 User range settings gain value	-	-	System
s [14]	CH2 User range settings offset value	-	-	System
ঙ [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	-	-	System
ঙ [17]	CH3 User range settings gain value	_	-	System
<u></u> জ [18]	CH4 User range settings offset value	_	-	System
<u>\$</u> [19]	CH4 User range settings gain value	_	-	System

(2) Q68ADV/Q68ADI/Q68DAVN/Q68DAV/Q68DAIN/Q68DAI/Q68CT

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	_	_	_
		The instruction completion status is stored.		
⑤[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
ାର				
<u> </u>	System area	-	-	-
⑤[J] ⑤[4]	CH1 Industrial shipment settings offset value	_	_	System
<u>৩</u> [+] (\$[5]	CH1 Industrial shipment settings gain value		_	System
⑤[6]	CH2 Industrial shipment settings offset value	_	_	System
⑤[7]	CH2 Industrial shipment settings gain value		_	System
⑤[7] ⑤[8]	CH3 Industrial shipment settings offset value	_	_	System
⑤[0]	CH3 Industrial shipment settings gain value		_	System
<u>ি</u> [স] (জ)[10]	CH4 Industrial shipment settings offset value		_	System
⑤[10] ⑤[11]	CH4 Industrial shipment settings gain value	_	_	System
⑤[12]	CH5 Industrial shipment settings offset value	_	_	System
⑤[12]	CH5 Industrial shipment settings gain value	_	_	System
⑤[14]	CH6 Industrial shipment settings offset value	_	_	System
⑤[15]	CH6 Industrial shipment settings gain value		_	System
⑤[16]	CH7 Industrial shipment settings offset value		_	System
⑤[17]	CH7 Industrial shipment settings gain value		_	System
⑤[18]	CH8 Industrial shipment settings offset value		_	System
⑤[19]	CH8 Industrial shipment settings gain value		_	System
⑤[20]	CH1 User range settings offset value		_	System
⑤[21]	CH1 User range settings gain value		_	System
⑤ [22]	CH2 User range settings offset value		_	System
⑤[23]	CH2 User range settings gain value		_	System
s[24]	CH3 User range settings offset value		_	System
⑤[25]	CH3 User range settings gain value		_	System
⑤[26]	CH4 User range settings offset value		_	System
⑤[27]	CH4 User range settings gain value	-	-	System
<u>③[28]</u>	CH5 User range settings offset value	-	-	System
<u>③[29]</u>	CH5 User range settings gain value	-	-	System
⑤[30]	CH6 User range settings offset value	-	-	System
⑤[31]	CH6 User range settings gain value	_	-	System
\$[32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	-	System
⑤[34]	CH8 User range settings offset value	_	-	System
⑤[35]	CH8 User range settings gain value	_	_	System

(3) Q64AD-GH/L60AD4-2GH

Control data of Q64AD-GH/L60AD4-2GH (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	_		_
©[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ[2]	Pass data classification setting	The value set for pass data classification setting (§) [2] by the OGLOAD instruction is stored. <q64ad-gh1> 0: Voltage specified 1: Current specified <l60ad4-2gh> 0: User range (Bipolar: Voltage) 1: User range (Unipolar: Current) b15 b4 b3 b2 b1 b0 0 to 0 CH4CH3CH2 CH1</l60ad4-2gh></q64ad-gh1>	0000н to 000Fн	System
ি [3]	System area	-	-	-
<u>জ</u> [4]	CH1 Industrial shipment settings offset value (L)	_	_	System
<u> </u>	CH1 Industrial shipment settings offset value (H)			
\$[6] \$[7]	CH1 Industrial shipment settings gain value (L) CH1 Industrial shipment settings gain value (H)	_	-	System
<u> </u>	CH2 Industrial shipment settings offset value (L)			
⑤ [9]	CH2 Industrial shipment settings offset value (H)	_	-	System
S [10]	CH2 Industrial shipment settings gain value (L)	_	-	System
<u>ি</u> [11]	CH2 Industrial shipment settings gain value (H)			
<u></u> (জ [12] (জ [13])	CH3 Industrial shipment settings offset value (L) CH3 Industrial shipment settings offset value (H)	_	-	System
⑤[14]	CH3 Industrial shipment settings gain value (L)			
S [14] S [15]	CH3 Industrial shipment settings gain value (H)	-	-	System
\$[16]	CH4 Industrial shipment settings offset value (L)			
§[17]	CH4 Industrial shipment settings offset value (H)		-	System
<u></u> জ [18]	CH4 Industrial shipment settings gain value (L)	_	-	System
<u>©</u> [19]	CH4 Industrial shipment settings gain value (H)			
⑤ [20]	CH1 User range settings offset value (L) CH1 User range settings offset value (H)	_	-	System
⑤[21] ⑤[22]	CH1 User range settings gain value (L)			
⑤ [23]	CH1 User range settings gain value (H)	-	-	System
§ [24]	CH2 User range settings offset value (L)			System
s [25]	CH2 User range settings offset value (H)		-	System
s [26]	CH2 User range settings gain value (L)	_	_	System
s [27]	CH2 User range settings gain value (H)			Cystem
s [28]	CH3 User range settings offset value (L)	-	-	System
s [29]	CH3 User range settings offset value (H)			

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Control data of Q64AD-GH/L60AD4-2GH (2/2)

Device	Item	Setting data	Setting range	Setting side
s [30]	CH3 User range settings gain value (L)	_		System
s [31]	CH3 User range settings gain value (H)	_		
⑤ [32]	CH4 User range settings offset value (L)	-	_	System
⑤ [33]	CH4 User range settings offset value (H)			
ি [34]	CH4 User range settings gain value (L)	-	-	System
s [35]	CH4 User range settings gain value (H)			

(4) Q62AD-DGH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	_
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
জ [2] জ [3]	- System area	_	_	_
s [4] s [5]	CH1 Industrial shipment settings offset value (L) CH1 Industrial shipment settings offset value (H)		_	System
<u> </u>	CH1 Industrial shipment settings gain value (L) CH1 Industrial shipment settings gain value (H)		_	System
\$[8] \$[9]	CH2 Industrial shipment settings offset value (L) CH2 Industrial shipment settings offset value (H)		_	System
⑤[10] ⑥[11]	CH2 Industrial shipment settings gain value (L) CH2 Industrial shipment settings gain value (H)		_	System
© [12] to © [19]	System area	_	_	_
জ [20] জ [21]	CH1 User range settings offset value (L) CH1 User range settings offset value (H)	_	-	System
\$ [22] \$ [23]	CH1 User range settings gain value (L) CH1 User range settings gain value (H)		-	System
<u></u>	CH2 User range settings offset value (L) CH2 User range settings offset value (H)		-	System
\$[26] \$[27]	CH2 User range settings gain value (L) CH2 User range settings gain value (H)	_	_	System
© [28] to © [35]	System area	_	_	System

(5) Q68AD-G/Q64ADH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
		The instruction completion status is stored.		_
ঙ[1]	Completion status	0 :Normal completion Other than 0 :Error completion (error code)	-	System
		Specify the voltage/current of the offset/gain values to		
		be read.		
§[2]	Pass data classification setting	0: Voltage specified	0000н to	User
0[4]	,	1: Current specified b15 b8 b7 b6 b5 b4 b3 b2 b1 b0	0000Fн	
		0 to 0 CH8 CH7 CH6 CH5 CH4 CH3 CH2 CH1		
s [3]	System area		_	_
<u> </u>	CH1 Industrial shipment settings offset value	_	_	System
<u> </u>	CH1 Industrial shipment settings gain value	_	_	System
⑤[6]	CH2 Industrial shipment settings offset value	_	_	System
⑤[7]	CH2 Industrial shipment settings gain value	_	_	System
<u> </u>	CH3 Industrial shipment settings offset value	-	_	System
s [9]	CH3 Industrial shipment settings gain value	_	_	System
s [10]	CH4 Industrial shipment settings offset value	-	-	System
§[11]	CH4 Industrial shipment settings gain value	_	_	System
<u>জ</u> [12]	CH5 Industrial shipment settings offset value	_	_	System
<u>জ</u> [13]	CH5 Industrial shipment settings gain value	_	-	System
s[14]	CH6 Industrial shipment settings offset value	_	_	System
s [15]	CH6 Industrial shipment settings gain value	_	_	System
s[16]	CH7 Industrial shipment settings offset value	_	-	System
<u>জ</u> [17]	CH7 Industrial shipment settings gain value	_	_	System
⑤ [18]	CH8 Industrial shipment settings offset value	_	_	System
⑤ [19]	CH8 Industrial shipment settings gain value	_	_	System
⑤ [20]	CH1 User range settings offset value	_	-	System
জ [21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	_	System
<u> </u>	CH2 User range settings gain value	_	_	System
<u></u> الا	CH3 User range settings offset value	_	-	System
<u></u> ا	CH3 User range settings gain value	_	_	System
<u>\$</u> [26]	CH4 User range settings offset value	_	-	System
s[27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s[31]	CH6 User range settings gain value	_	-	System
© [32]	CH7 User range settings offset value	_	_	System
⑤ [33]	CH7 User range settings gain value	_	-	System
ি [34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	-	System

(6) Q66AD-DG^{*1}

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	_	-	_
s[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
	- System area	-	-	_
<u> </u>	CH1 Industrial shipment settings offset value	_	_	System
<u> </u>	CH1 Industrial shipment settings gain value		_	System
<u> </u>	CH2 Industrial shipment settings offset value	_	_	System
<u>\$[7]</u>	CH2 Industrial shipment settings gain value	_	_	System
§ [8]	CH3 Industrial shipment settings offset value	_	-	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	_	System
⑤ [10]	CH4 Industrial shipment settings offset value	_	_	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
⑤ [13]	CH5 Industrial shipment settings gain value	_	-	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
\$ [16] to \$ [19]	System area	_	_	System
s [20]	CH1 User range settings offset value	_	-	System
\$ [21]	CH1 User range settings gain value	-	-	System
\$ [22]	CH2 User range settings offset value	-	-	System
s [23]	CH2 User range settings gain value	-	-	System
s [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
s [26]	CH4 User range settings offset value	_	-	System
s [27]	CH4 User range settings gain value	_	-	System
⑤ [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s [31]	CH6 User range settings gain value	_	-	System
© [32] to © [35]	System area	_	_	System

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(7) Q62DAN/Q62DA

Device	Item	Setting data	Setting range	Setting side
§ [0]	System area	-	-	-
<u>ি</u> [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Pass data classification setting	The value set for pass data classification setting (§) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b2 b1 b0 cH2 cH1	0000н to 0003н	System
ঙ [3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
\$[5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
\$[7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	_	-	System
ঙ [10]	CH2 User range settings offset value	-	-	System
\$[11]	CH2 User range settings gain value	_	-	System

(8) Q62DA-FG

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	_
\$[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ[2]	Pass data classification setting	The value set for pass data classification setting (\$) [2] by the OGLOAD instruction is stored. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified bits to b12 bits to b12 0H 0H	-	System
⑤ [3]	System area	-	-	-
<u>জ</u> [4]	CH1 Industrial shipment settings offset value (used for D/A)	-	-	System
ঙ [5]	CH1 Industrial shipment settings gain value (used for D/A)	_	-	System
s [6]	CH2 Industrial shipment settings offset value (used for D/A)	-	-	System
s[7]	CH2 Industrial shipment settings gain value (used for D/A)	-	-	System
s [8]	CH1 Industrial shipment settings offset value (used for monitor output)	-	-	System
ঙ [9]	CH1 Industrial shipment settings gain value (used for monitor output)	-	-	System
<u>জ</u> [10]	CH2 Industrial shipment settings offset value (used for monitor output)	_	_	System
\$[11]	CH2 Industrial shipment settings gain value (used for monitor output)	_	-	System
s [12]	CH1 User range settings offset value (used for D/A)	_	-	System
ি [13]	CH1 User range settings gain value (used for D/A)	-	-	System
<u>ি</u> [14]	CH2 User range settings offset value (used for D/A)	-	-	System
\$ [15]	CH2 User range settings gain value (used for D/A)	_	-	System
s [16]	CH1 User range settings offset value (used for monitor output)	_	-	System
s [17]	CH1 User range settings gain value (used for monitor output)	_	_	System
জ [18]	CH2 User range settings offset value (used for monitor output)	_	-	System
s [19]	CH2 User range settings gain value (used for monitor output)	-	-	System

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(9) Q66DA-G^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	_
s[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
ভ [2]	Pass data classification setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. OH: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified $b_{15}^{15} b_{12}^{12} b_{11}^{11} b_{10}^{10} b_{9}^{10} b_{8}^{10} b_{7}^{10} b_{6}^{10} b_{5}^{10} b_{4}^{10} b_{10}^{10} b_{10}^{$	_	User
s [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	-	-	System
⑤ [6]	CH2 Industrial shipment settings offset value	_	-	System
s [7]	CH2 Industrial shipment settings gain value	-	-	System
§ [8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
<u></u> জ[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
<u></u> জ[13]	CH5 Industrial shipment settings gain value	_	-	System
<u></u> জ[14]	CH6 Industrial shipment settings offset value	_	-	System
[15]	CH6 Industrial shipment settings gain value	_	-	System
s [16]	CH1 User range settings offset value	_	-	System
§[17]	CH1 User range settings gain value	_	_	System
⑤ [18]	CH2 User range settings offset value	_	-	System
s [19]	CH2 User range settings gain value	_	-	System
s [20]	CH3 User range settings offset value	_	-	System
⑤ [21]	CH3 User range settings gain value	_	-	System
s [22]	CH4 User range settings offset value	_	-	System
s [23]	CH4 User range settings gain value	_	-	System
s[24]	CH5 User range settings offset value	_	-	System
[25]	CH5 User range settings gain value	-	-	System
⑤[26]	CH6 User range settings offset value	_	-	System
s[27]	CH6 User range settings gain value	_	-	System
<u>s</u> [28]				· · · · · · · · · · · · · · · · · · ·
to	System area	_	-	-
s [35]				

*1 : Set the data only to the Pass data classification setting \$ [2].

When the data is written to the area to be set by system, offset/gain setting value is not read properly.

(10) Q64RD/Q64RD-G *1

Control data of Q64RD/Q64RD-G (1/5)

Device		Item	Setting data	Setting range	Setting side
S	[0]	System area	-	-	-
\$	[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
S	[2]	System area			
S	[3]		_	_	_
	⑤ [4]	3-wire CH1 Factory default offset value	-	-	System
	<u> </u> (5]	3-wire CH1 Factory default offset value	-	-	System
Q64RD	\$[6]	3-wire CH1 Factory default gain value	-	-	System
	⑤ [7]	3-wire CH1 Factory default gain value	-	-	System
	§[8]	3-wire CH1 User range settings offset value	-	-	System
	⑤ [9]	3-wire CH1 User range settings offset value	-	-	System
	s [10]	3-wire CH1 User range settings gain value	-	-	System
	<u></u> জ[11]	3-wire CH1 User range settings gain value	-	-	System
	⑤ [4]	3-wire CH1 Factory default offset value (L)			Sustam
	s [5]	3-wire CH1 Factory default offset value (H)		-	System
	⑤ [6]	3-wire CH1 Factory default gain value (L)			System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value (H)	_	_	System
-G	§ [8]	3-wire CH1 User range settings offset value (L)			System
	⑤ [9]	3-wire CH1 User range settings offset value (H)	_	_	System
	s [10]	3-wire CH1 User range settings gain value (L)			Sustam
	s[11]	3-wire CH1 User range settings gain value (H)		_	System
S	[12]	3-wire CH1 User range settings resistance offset value (L)			Queters
S	[13]	3-wire CH1 User range settings resistance offset value (H)		_	System
S	[14]	3-wire CH1 User range settings resistance gain value (L)			Sustam
S	[15]	3-wire CH1 User range settings resistance gain value (H)		_	System
	s [16]	4-wire CH1 Factory default offset value	-	-	System
	<u>জ</u> [17]	4-wire CH1 Factory default offset value	-	-	System
	⑤ [18]	4-wire CH1 Factory default gain value	-	-	System
06400	s [19]	4-wire CH1 Factory default gain value	-	_	System
Q64RD	s [20]	4-wire CH1 User range settings offset value	-	_	System
	<u> </u> ⁽⁵⁾ ⁽²¹⁾	4-wire CH1 User range settings offset value	-	_	System
	⑤ [22]	4-wire CH1 User range settings gain value	-	_	System
	s [23]	4-wire CH1 User range settings gain value	-	-	System

Other 4-wire CH1 Factory default offset value (1) - Ching System 0 (11) 4-wire CH1 Factory default and value (H) - - System 0 (11) 4-wire CH1 Factory default gain value (L) - - System 0 (11) 4-wire CH1 Factory default gain value (L) - - System 0 (12) 4-wire CH1 User range estings offset value (L) - - System 0 (12) 4-wire CH1 User range estings offset value (L) - - System 0 (12) 4-wire CH1 User range estings offset value (L) - - System 0 (12) 4-wire CH1 User range estings resistance offset value (L) - - System 0 (12) 4-wire CH1 User range estings resistance gain value (L) - - System 0 (12) 3-wire CH2 Factory default offset value - - System 0 (13) 3-wire CH2 Factory default factor value - - System 0 (13) 3-wire CH2 Eactory default factor value - - System 0 (13)	Dev	vice	Item	Setting data	Setting	Setting
ORAD					range	side
Other Other System 018 4-wire CH1 Factory default gain value (h) - - System 019 4-wire CH1 Barchory default gain value (h) - - System 019 4-wire CH1 User range settings offset value (h) - - System 0120 4-wire CH1 User range settings gain value (h) - - System 0121 4-wire CH1 User range settings gain value (h) - - System 0121 4-wire CH1 User range settings resistance offset value (h) - - System 0121 4-wire CH1 User range settings resistance offset value (h) - - System 0121 4-wire CH1 User range settings resistance offset value (h) - - System 0121 4-wire CH1 User range settings resistance offset value - - System 0121 4-wire CH2 Factory default offset value - - System 0131 3-wire CH2 Factory default offset value - - System 0133 3-wire CH2 Eactory default offset value (h) <				-	-	System
Ocket D (19) 4-wire CH1 Factory default gain value (h) - - System G (20) 4-wire CH1 User range settings offset value (L) - - System (21) 4-wire CH1 User range settings gain value (L) - - System (21) 4-wire CH1 User range settings gain value (L) - - System (21) 4-wire CH1 User range settings gain value (L) - - System (212) 4-wire CH1 User range settings resistance offset value (H) - - System (212) 4-wire CH1 User range settings resistance gain value (L) - - System (212) 4-wire CH1 User range settings resistance gain value (L) - - System (212) 4-wire CH2 Eactory default offset value - - System (212) 3-wire CH2 Eactory default offset value - - System (213) 3-wire CH2 Eactory default offset value - - System (313) 3-wire CH2 User range settings offset value - - System <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
G O(20) 4-wire CH1 User range settings offset value (1) - - System O(21) 4-wire CH1 User range settings offset value (H) - - System O(22) 4-wire CH1 User range settings and value (L) - - System O(22) 4-wire CH1 User range settings resistance offset value (H) - - System O(22) 4-wire CH1 User range settings resistance offset value (L) - - System O(23) 4-wire CH1 User range settings resistance offset value (L) - - System O(24) 4-wire CH1 User range settings resistance offset value (L) - - System O(24) 4-wire CH1 User range settings resistance offset value (L) - - System O(21) 4-wire CH2 Eactory default offset value - - System O(31) 3-wire CH2 Eactory default offset value - - System O(32) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 User range settings offset value (L) - -				-	-	System
C[20] white CH1 User range settings offset value (L)						
OteA OteA System O(22) 4-wire CH1 User range settings gain value (1) - - System O(24) 4-wire CH1 User range settings resistance offset value (1) - - System O(25) 4-wire CH1 User range settings resistance offset value (1) - - System O(26) 4-wire CH1 User range settings resistance offset value (1) - - System O(27) 4-wire CH2 User range settings resistance offset value - - System O(28) 3-wire CH2 Factory default offset value - - System O(13) 3-wire CH2 Eactory default gain value - - System O(13) 3-wire CH2 User range settings offset value - - System O(13) 3-wire CH2 User range settings gain value - - System O(13) 3-wire CH2 Eactory default offset value - - System O(13) 3-wire CH2 Eactory default offset value (1) - - System O(13) 3-wire CH2 Eactory default offset value (1)	U			-	-	System
Cl23 4-wire CH1 User range settings gain value (h) - - System Cl24 4-wire CH1 User range settings resistance offset value (l) - - System Cl25 4-wire CH1 User range settings resistance offset value (l) - - System Cl26 4-wire CH1 User range settings resistance gain value (l) - - System Cl27 4-wire CH2 User range settings resistance gain value (l) - - System Cl28 3-wire CH2 Factory default diffet value - - System Cl30 3-wire CH2 Factory default gain value - - System Cl31 3-wire CH2 User range settings offset value - - System Cl33 3-wire CH2 User range settings gain value - - System Cl33 3-wire CH2 Factory default diffet value (l) - - System Cl33 3-wire CH2 Factory default diffet value (l) - - System Cl33 3-wire CH2 Factory default diffet value (l) - - System Cl33						
Organ 4-wire CH1 User range settings resistance offset value (L) - System O(25) 4-wire CH1 User range settings resistance offset value (H) - - System O(27) 4-wire CH1 User range settings resistance gain value (L) - - System O(27) 4-wire CH1 User range settings resistance gain value (H) - - System O(28) 3-wire CH2 Factory default offset value - - System O(120) 3-wire CH2 Factory default gain value - - System O(13) 3-wire CH2 Factory default offset value - - System O(13) 3-wire CH2 Eactory default offset value - - System O(13) 3-wire CH2 Eactory default offset value - - System O(13) 3-wire CH2 Eactory default offset value - - System O(14) 3-wire CH2 Factory default offset value (H) - - System O(12) 3-wire CH2 Factory default offset value (L) - - System O(12) 3-wire C				-	-	System
O[25] 4-wire CH1 User range settings resistance offset value (h) - - System O[26] 4-wire CH1 User range settings resistance gain value (h) - - System O[27] 4-wire CH1 User range settings resistance gain value (h) - - System O[28] 3-wire CH2 Factory default offset value - - System O[30] 3-wire CH2 Factory default gain value - - System O[30] 3-wire CH2 Factory default gain value - - System O[30] 3-wire CH2 Factory default gain value - - System O[31] 3-wire CH2 Factory default gain value - - System O[33] 3-wire CH2 Factory default offset value - - System O[34] 3-wire CH2 Factory default offset value (h) - - System O[34] 3-wire CH2 Factory default offset value (h) - - System O[25] 3-wire CH2 Factory default offset value (h) - - System O[34] 3-wire CH2						
Oto Avvire CH1 User range settings resistance gain value (L) - - System Operating 2[2] 4-wire CH1 User range settings resistance gain value (H) - - System Operating 2[2] 3-wire CH2 Factory default offset value - - System Operating 3[3] 3-wire CH2 Factory default offset value - - System Operating 3[3] 3-wire CH2 Factory default gain value - - System Operating 3[3] 3-wire CH2 User range settings offset value - - System Operating 3[3] 3-wire CH2 User range settings offset value - - System Operating 3[3] 3-wire CH2 User range settings gain value - - System Operating 3[3] 3-wire CH2 Eactory default offset value (L) - - System Operating 3[3] 3-wire CH2 User range settings offset value (L) - - System Operating 3[3] 3-wire CH2 User range settings offset value (L) -				-	-	System
Other - System O(27) 4-wire CH1 User range settings resistance gain value (H) - - System O(28) 3-wire CH2 Factory default offset value - - System O(29) 3-wire CH2 Factory default offset value - - System O(30) 3-wire CH2 Factory default gain value - - System O(31) 3-wire CH2 Factory default gain value - - System O(31) 3-wire CH2 User range settings offset value - - System O(31) 3-wire CH2 User range settings offset value - - System O(31) 3-wire CH2 User range settings offset value - - System O(32) 3-wire CH2 Factory default offset value (L) - - System O(33) 3-wire CH2 Factory default gain value (L) - - System O(34) 3-wire CH2 User range settings offset value (L) - - System O(34) 3-wire CH2 User range settings resistance offset value (L) - -						
O[28] 3-wire CH2 Factory default offset value - - System O(64RD 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 Factory default gain value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 Eactory default offset value (L) - - System 0[35] 3-wire CH2 Factory default dist value (L) - - System 0[36] 3-wire CH2 Factory default dist value (L) - - System 0[37] 3-wire CH2 User range settings offset value (L) - - System 0[38] 3-wire CH2 User range settings resistance offset value (L) - - System 0[38] 3-wire CH2				_	_	System
OLD Swire CH2 Factory default offset value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 User range settings gain value - - System 0[36] 3-wire CH2 User range settings offset value (L) - - System 0[30] 3-wire CH2 Factory default offset value (H) - - System 0[30] 3-wire CH2 User range settings offset value (H) - - System 0[31] 3-wire CH2 User range settings offset value (H) - - System 0[32] 3-wire CH2 User range settings offset value (H) - - System 0[33] 3-wire CH2	<u>(</u>)	[27]				
Other System Operating 3-wire CH2 Factory default gain value - - System Operating 3-wire CH2 Factory default gain value - - System Operating 3-wire CH2 User range settings offset value - - System Operating 3-wire CH2 User range settings gain value - - System Operating 3-wire CH2 User range settings gain value - - System Operating 3-wire CH2 User range settings gain value - - System Operating 3-wire CH2 User range settings gain value - - System Operating 3-wire CH2 Eactory default offset value (L) - - System Operating 3-wire CH2 User range settings offset value (L) - - System Operating 3-wire CH2 User range settings offset value (L) - - System Operating 3-wire CH2 User range settings resistance offset value (L) - - System Operating 3-wire CH2 User range settings resistance offset value (L)			3-wire CH2 Factory default offset value	-	-	
Older Original System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings gain value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 Eactory default offset value (L) - - System 0[36] 3-wire CH2 Factory default offset value (H) - - System 0[31] 3-wire CH2 Factory default gain value (L) - - System 0[32] 3-wire CH2 Eactory default gain value (L) - - System 0[32] 3-wire CH2 User range settings offset value (L) - - System 0[33] 3-wire CH2 User range settings gain value (L) - - System 0[34] 3-wire CH2 User range settings gain value (L) - - System 0[36] 3-wire CH2 User range settings gain value (L) - - <t< td=""><td></td><td>s [29]</td><td></td><td>-</td><td>-</td><td>System</td></t<>		s [29]		-	-	System
O64R0 O (32) 3-wire CH2 User range settings offset value - - System © [32] 3-wire CH2 User range settings offset value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 User range settings gain value - - System © [28] 3-wire CH2 Factory default offset value (L) - - System © [29] 3-wire CH2 Factory default gain value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (L) - - System © [32] 3-wire CH2 User range settings offset value (L) - - System © [33] 3-wire CH2 User range settings gain value (L) - - System © [34] 3-wire CH2 User range settings resistance offset value (L) - - System © [36] 3-wire CH2 User range settings resistance gain value (L) - - System <		s [30]	3-wire CH2 Factory default gain value	-	-	System
Other System © [33] 3-wire CH2 User range settings gain value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 User range settings gain value - - System © [28] 3-wire CH2 Eactory default offset value (L) - - System © [29] 3-wire CH2 Factory default gain value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (L) - - System © [32] 3-wire CH2 User range settings offset value (L) - - System © [33] 3-wire CH2 User range settings gain value (L) - - System © [34] 3-wire CH2 User range settings resistance offset value (L) - - System © [36] 3-wire CH2 User range settings resistance offset value (L) - - System © [37] 3-wire CH2 User range settings resistance gain value (H) -	Q64RD	s[31]	3-wire CH2 Factory default gain value	-	-	System
Image: Classical system System Image: Sign of Sign		s [32]	3-wire CH2 User range settings offset value	-	-	System
Image: Classing and the experimental experimentexperimental experimental experimental exper		s [33]	3-wire CH2 User range settings offset value	_	-	System
Older 3-wire CH2 Factory default offset value (L) - - System OG64RD • • • • System - System O64RD • • • • - - System • • • • • • - - System • • • • • • - - System • • • • • • • - System • • •		ি [34]	3-wire CH2 User range settings gain value	-	-	System
OG4RD - - System 0[29] 3-wire CH2 Factory default offset value (H) - - System 0[30] 3-wire CH2 Factory default gain value (L) - - System 0[31] 3-wire CH2 Factory default gain value (H) - - System 0[32] 3-wire CH2 Factory default gain value (H) - - System 0[33] 3-wire CH2 User range settings offset value (L) - - System 0[34] 3-wire CH2 User range settings gain value (L) - - System 0[35] 3-wire CH2 User range settings resistance offset value (L) - - System 0[36] 3-wire CH2 User range settings resistance offset value (L) - - System 0[37] 3-wire CH2 User range settings resistance offset value (H) - - System 0[38] 3-wire CH2 User range settings resistance gain value (H) - - System 0[39] 3-wire CH2 User range settings resistance gain value (H) - - System 0[39] 3-wire CH2		\$ [35]	3-wire CH2 User range settings gain value	-	-	System
© [29] 3-wire CH2 Factory default offset value (H) - - System • 0 [30] 3-wire CH2 Factory default gain value (L) - - System • 0 [31] 3-wire CH2 Factory default gain value (L) - - System • 0 [32] 3-wire CH2 User range settings offset value (L) - - System • 0 [33] 3-wire CH2 User range settings gain value (L) - - System • 0 [34] 3-wire CH2 User range settings gain value (L) - - System • 0 [35] 3-wire CH2 User range settings gain value (L) - - System • 0 [36] 3-wire CH2 User range settings gain value (L) - - System • 0 [36] 3-wire CH2 User range settings resistance offset value (L) - - System • 0 [37] 3-wire CH2 User range settings resistance offset value (H) - - System • 0 [38] 3-wire CH2 User range settings resistance gain value (L) - - System • 0 [39] 3-wire CH2 User range settings resistance gain value (H) - -		s [28]	3-wire CH2 Factory default offset value (L)	_	_	System
O64RD • [31] 3-wire CH2 Factory default gain value (H) • [32] 3-wire CH2 User range settings offset value (L) • [33] 3-wire CH2 User range settings offset value (H) • [33] 3-wire CH2 User range settings gain value (L) • [35] 3-wire CH2 User range settings gain value (L) • [35] 3-wire CH2 User range settings resistance offset value (L) • [35] 3-wire CH2 User range settings resistance offset value (L) • [36] 3-wire CH2 User range settings resistance offset value (L) • [36] 3-wire CH2 User range settings resistance offset value (L) • [37] 3-wire CH2 User range settings resistance gain value (L) • [38] 3-wire CH2 User range settings resistance gain value (L) • [39] 3-wire CH2 User range settings resistance gain value (H) • [39] 3-wire CH2 User range settings resistance gain value (H) • [41] 4-wire CH2 Eactory default offset value - - System (a) [42] 4-wire CH2 Factory default offset value - - System (a) [43] 4-wire CH2 Eactory default offset value - - System (a) [43] 4-wire CH2 Eactory default offset value - - System (a) [44] 4-wire CH2 Eactory default gain value - - System (a) [45] 4-wire CH2 User range settings offset value - - System (a) [45] 4-wire CH2 User range settings offset value - System (a) [45] 4-wire CH2 User range settings offset value - System (a) [45] 4-wire CH2 User range settings offset value - System (a) [45] 4-wire CH2 User ra		s [29]	3-wire CH2 Factory default offset value (H)			Cycloni
O64RD §[31] 3-wire CH2 Factory default gain value (H) - - System -G §[32] 3-wire CH2 User range settings offset value (L) - - System §[33] 3-wire CH2 User range settings offset value (H) - - System §[34] 3-wire CH2 User range settings gain value (L) - - System §[35] 3-wire CH2 User range settings gain value (L) - - System §[36] 3-wire CH2 User range settings resistance offset value (L) - - System §[36] 3-wire CH2 User range settings resistance offset value (L) - - System §[37] 3-wire CH2 User range settings resistance gain value (L) - - System §[38] 3-wire CH2 User range settings resistance gain value (L) - - System §[39] 3-wire CH2 User range settings resistance gain value (H) - - System §[39] 3-wire CH2 User range settings resistance gain value (H) - - System §[41] 4-wire CH2 Factory default offset value - - System §[42] 4-wire		s [30]	3-wire CH2 Factory default gain value (L)	_	_	System
(a) [32] 0-wire 0H2 User range settings offset value (H) - - System (a) [33] 3-wire CH2 User range settings gain value (L) - - System (a) [35] 3-wire CH2 User range settings gain value (L) - - System (a) [36] 3-wire CH2 User range settings resistance offset value (L) - - System (a) [36] 3-wire CH2 User range settings resistance offset value (L) - - System (a) [37] 3-wire CH2 User range settings resistance offset value (L) - - System (a) [38] 3-wire CH2 User range settings resistance gain value (L) - - System (b) [39] 3-wire CH2 User range settings resistance gain value (H) - - System (b) [39] 3-wire CH2 User range settings resistance gain value (H) - - System (a) [40] 4-wire CH2 Factory default offset value - - System (a) [41] 4-wire CH2 Factory default offset value - - System (a) [42] 4-wire CH2 Factory default gain value - - System (a) [43] 4-wire CH2 User r	Q64RD	\$[31]	3-wire CH2 Factory default gain value (H)	_		Oystern
(§ [33] 3-wire CH2 User range settings gain value (H) - - System (§ [34] 3-wire CH2 User range settings gain value (L) - - System (§ [36] 3-wire CH2 User range settings gain value (H) - - System (§ [36] 3-wire CH2 User range settings resistance offset value (L) - - System (§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [41] 4-wire CH2 Eactory default offset value - - System (§ [41] 4-wire CH2 Factory default gain value - - System (§ [42] 4-wire CH2 Eactory default gain value - - System (§ [43] 4-wire CH2 User range settings offse	-G	\$[32]	3-wire CH2 User range settings offset value (L)			System
Image: Section of the section of th		\$[33]	3-wire CH2 User range settings offset value (H)	_	_	Oystern
(§ [35] 3-wire CH2 User range settings gain value (H) - - System (§ [36] 3-wire CH2 User range settings resistance offset value (L) - - - System (§ [37] 3-wire CH2 User range settings resistance offset value (H) - - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Eactory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 User range settings offset value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User ran		\$[34]	3-wire CH2 User range settings gain value (L)			Svotom
Sigar 3-wire CH2 User range settings resistance offset value (H) - - System Sigar 3-wire CH2 User range settings resistance gain value (L) - - - System Sigar 3-wire CH2 User range settings resistance gain value (L) - - - System Sigar 3-wire CH2 User range settings resistance gain value (H) - - - System Sigar 3-wire CH2 User range settings resistance gain value (H) - - System Sigar 4-wire CH2 Factory default offset value - - System Sigar 4-wire CH2 Factory default offset value - - System Sigar 4-wire CH2 Factory default gain value - - System Sigar 4-wire CH2 Factory default gain value - - System Sigar 4-wire CH2 User range settings offset value - - System Sigar 4-wire CH2 User range settings offset value - - System Sigar 4-wire CH2 User range settings offset value - - System Sigar 4-wire CH2 User range settings gain		s [35]	3-wire CH2 User range settings gain value (H)	_	-	System
(§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value - - System	S	[36]	3-wire CH2 User range settings resistance offset value (L)			System
Sign 3-wire CH2 User range settings resistance gain value (H) - - System Sign 3-wire CH2 User range settings resistance gain value (H) - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings gain value - - System Sign 4-wire CH2 User range settings gain value - - System Sign 4	S	[37]	3-wire CH2 User range settings resistance offset value (H)	_	-	System
(\$[39] 3-wire CH2 User range settings resistance gain value (H) - - System (\$[40] 4-wire CH2 Factory default offset value - - System (\$[41] 4-wire CH2 Factory default offset value - - System (\$[41] 4-wire CH2 Factory default offset value - - System (\$[42] 4-wire CH2 Factory default gain value - - System (\$[43] 4-wire CH2 Factory default gain value - - System (\$[44] 4-wire CH2 User range settings offset value - - System (\$[45] 4-wire CH2 User range settings offset value - - System (\$[46] 4-wire CH2 User range settings offset value - - System	S	[38]	3-wire CH2 User range settings resistance gain value (L)			Custom
Q64RD \$\overline{1}\$ 4-wire CH2 Factory default offset value - - System \$\overline{1}\$ 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ 43] 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ 44] 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ 4-wire CH2 User range settings gain value - - System \$\overline{1}\$ 4-wire CH2 User range settings gain value - - System	S	[39]	3-wire CH2 User range settings resistance gain value (H)	-	_	System
Q64RD ^S [42] ⁴ -wire CH2 Factory default gain value ⁻ ⁻ ^S [43] ⁴ -wire CH2 Factory default gain value ⁻ ⁻ ^S [44] ⁴ -wire CH2 Factory default gain value ⁻ ⁻ ^S [44] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ^S [45] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ^S [45] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ^S [46] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ^S [46] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ^S [46] ¹ - ¹		⑤ [40]	4-wire CH2 Factory default offset value	-	-	System
Q64RD [©] [43] ⁴ -wire CH2 Factory default gain value ⁻ ⁻ ⁻ ⁻ ⁵ [44] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ⁻ ⁻ ⁵ [45] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ⁻ ⁻ ⁵ [46] ⁴ -wire CH2 User range settings offset value ⁻ ⁻ ⁻ ⁵ [46] ⁵ [46] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ⁻ ⁵ [30] ⁵ [46] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ⁻ ⁵ [30] ⁵ [30] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ⁻ ⁵ [30] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ⁻ ⁵ [30] ⁴ -wire CH2 User range settings gain value ⁻ ⁻ ⁻ ⁻ ⁵ [30]		<u></u> জ[41]	4-wire CH2 Factory default offset value	_	-	System
Section (43) 4-wire CH2 Factory default gain value - - System Section (44) 4-wire CH2 User range settings offset value - - System Section (45) 4-wire CH2 User range settings offset value - - System Section (45) 4-wire CH2 User range settings offset value - - System Section (46) 4-wire CH2 User range settings gain value - - System		s [42]	4-wire CH2 Factory default gain value	-	-	System
S [44] 4-wire CH2 User range settings offset value - - System S [45] 4-wire CH2 User range settings offset value - - System S [46] 4-wire CH2 User range settings gain value - - System	00455		4-wire CH2 Factory default gain value	_	-	System
(\$ [45] 4-wire CH2 User range settings offset value - - System (\$ [46] 4-wire CH2 User range settings gain value - - System	Q64RD		4-wire CH2 User range settings offset value	_	-	System
Image: Second			4-wire CH2 User range settings offset value	_	_	System
			4-wire CH2 User range settings gain value	_	-	System
		⑤[47]	4-wire CH2 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (2/5)

Device		Item	Setting data	Setting range	Setting side
	s [40]	4-wire CH2 Factory default offset value (L)			
	<u></u>	4-wire CH2 Factory default offset value (H)	-	-	System
	<u>\$</u> [42]	4-wire CH2 Factory default gain value (L)			
Q64RD	<u> </u>	4-wire CH2 Factory default gain value (H)	-	-	System
-G	<u>\$[44]</u>	4-wire CH2 User range settings offset value (L)			
	<u>\$</u> [45]	4-wire CH2 User range settings offset value (H)	_	-	System
	<u>\$</u> [46]	4-wire CH2 User range settings gain value (L)			
	<u>\$[47]</u>	4-wire CH2 User range settings gain value (H)	_	-	System
s	[48]	4-wire CH2 User range settings resistance offset value (L)			
	[49]	4-wire CH2 User range settings resistance offset value (H)	_	-	System
	[50]	4-wire CH2 User range settings resistance gain value (L)			
	[51]	4-wire CH2 User range settings resistance gain value (H)	_	-	System
	\$[52]	3-wire CH3 Factory default offset value	_	-	System
	s [53]	3-wire CH3 Factory default offset value	_	-	System
	s [54]	3-wire CH3 Factory default gain value	_	-	System
00100	s [55]	3-wire CH3 Factory default gain value	_	-	System
Q64RD	§ [56]	3-wire CH3 User range settings offset value	_	-	System
	§[57]	3-wire CH3 User range settings offset value	-	-	System
	§ [58]	3-wire CH3 User range settings gain value	-	-	System
	s [59]	3-wire CH3 User range settings gain value	-	-	System
	\$ [52]	3-wire CH3 Factory default offset value (L)			<u> </u>
	s [53]	3-wire CH3 Factory default offset value (H)		_	System
	s [54]	3-wire CH3 Factory default gain value (L)			Queters
Q64RD	s [55]	3-wire CH3 Factory default gain value (H)	-	_	System
-G	s [56]	3-wire CH3 User range settings offset value (L)			Custom
	s [57]	3-wire CH3 User range settings offset value (H)	_	_	System
	s [58]	3-wire CH3 User range settings gain value (L)			Sustam
	s [59]	3-wire CH3 User range settings gain value (H)	-	-	System
S	[60]	3-wire CH3 User range settings resistance offset value (L)			Svotom
S	[61]	3-wire CH3 User range settings resistance offset value (H)	_	-	System
(\$	[62]	3-wire CH3 User range settings resistance gain value (L)			System
5	[63]	3-wire CH3 User range settings resistance gain value (H)	_	-	System
	\$[64]	4-wire CH3 Factory default offset value	-	-	System
	s [65]	4-wire CH3 Factory default offset value	-	-	System
	s [66]	4-wire CH3 Factory default gain value	-	-	System
Q64RD	§[67]	4-wire CH3 Factory default gain value	_	-	System
	§ [68]	4-wire CH3 User range settings offset value	_	-	System
	§ [69]	4-wire CH3 User range settings offset value	-	-	System
	ঙ [70]	4-wire CH3 User range settings gain value	-	-	System
	<u></u> জ [71]	4-wire CH3 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (3/5)

Dev	vice	Item	Setting data	Setting	Setting
				range	side
	<u></u>	4-wire CH3 Factory default offset value (L)	_	-	System
	<u></u>	4-wire CH3 Factory default offset value (H)			
	s [66]	4-wire CH3 Factory default gain value (L)	-	_	System
Q64RD	\$[67]	4-wire CH3 Factory default gain value (H)			
-G	<u></u> §[68]	4-wire CH3 User range settings offset value (L)	_	_	System
	s [69]	4-wire CH3 User range settings offset value (H)			,
	s [70]	4-wire CH3 User range settings gain value (L)	_	_	System
	s[71]	4-wire CH3 User range settings gain value (H)			oyotom
S	[72]	4-wire CH3 User range settings resistance offset value (L)	_	_	System
S	[73]	4-wire CH3 User range settings resistance offset value (H)			oyotom
S	[74]	4-wire CH3 User range settings resistance gain value (L)			System
S	[75]	4-wire CH3 User range settings resistance gain value (H)	_	_	System
	s[76]	3-wire CH4 Factory default offset value	-	-	System
	⑤ [77]	3-wire CH4 Factory default offset value	_	-	System
	s [78]	3-wire CH4 Factory default gain value	_	-	System
	s[79]	3-wire CH4 Factory default gain value	_	-	System
Q64RD	s [80]	3-wire CH4 User range settings offset value	_	-	System
	\$[81]	3-wire CH4 User range settings offset value	_	-	System
	\$[82]	3-wire CH4 User range settings gain value	_	_	System
	<u> </u>	3-wire CH4 User range settings gain value	_	_	System
	<u>\$</u> [76]	3-wire CH4 Factory default offset value (L)			
	<u>\$[77]</u>	3-wire CH4 Factory default offset value (H)	-	-	System
	⑤[78]	3-wire CH4 Factory default gain value (L)			
Q64RD	⑤[79]	3-wire CH4 Factory default gain value (H)	-	-	System
-G	S [80] S	3-wire CH4 User range settings offset value (L)			
	⑤[81]	3-wire CH4 User range settings offset value (H)	-	-	System
	[82]	3-wire CH4 User range settings gain value (L)			
	⑤[83]	3-wire CH4 User range settings gain value (H)	-	-	System
	[84]	3-wire CH4 User range settings resistance offset value (L)			
	[85]	3-wire CH4 User range settings resistance offset value (H)	-	-	System
	[86]	3-wire CH4 User range settings resistance gain value (L)			
		3-wire CH4 User range settings resistance gain value (H)	-	-	System
	[87]	4-wire CH4 Factory default offset value		_	System
	(88)	4-wire CH4 Factory default offset value		_	System
	(§ [89]	4-wire CH4 Factory default gain value	_	_	System
	(§) [90]		_		
Q64RD	<u> </u>	4-wire CH4 Factory default gain value	-	-	System
	⑤ [92]	4-wire CH4 User range settings offset value	-	-	System
	s [93]	4-wire CH4 User range settings offset value	-	-	System
	<u> </u>	4-wire CH4 User range settings gain value	_	-	System
	s [95]	4-wire CH4 User range settings gain value	-	-	System

Control data of Q64RD/Q64RD-G (4/5)

Device		Item	Setting data	Setting range	Setting side	
	S [88]	4-wire CH4 Factory default offset value (L)	_	_	System	
	s [89]	4-wire CH4 Factory default offset value (H)		_	Gystern	
	s [90]	4-wire CH4 Factory default gain value (L)	_	_	System	
Q64RD	s [91]	4-wire CH4 Factory default gain value (H)			Gystern	
-G	s [92]	4-wire CH4 User range settings offset value (L)		_	System	
	s [93]	4-wire CH4 User range settings offset value (H)			Cyclem	
	s [94]	4-wire CH4 User range settings gain value (L)		_	System	
	s [95]	4-wire CH4 User range settings gain value (H)		_	Gystern	
S	[96]	4-wire CH4 User range settings resistance offset value (L)	_	_	System	
s [97]		4-wire CH4 User range settings resistance offset value (H)			Cycloni	
S	[98]	4-wire CH4 User range settings resistance gain value (L)	_	_	System	
S	[99]	4-wire CH4 User range settings resistance gain value (H)			System	

Control data of Q64RD/Q64RD-G (5/5)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(11) Q64TD/Q64TDV-GH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
<u> </u>	System area	-	_	_
§ [4]	CH1 Factory default offset value	_	-	System
s [5]	CH1 Factory default gain value	_	-	System
\$[6]	CH1 User range settings offset value	_	-	System
\$[7]	CH1 User range settings gain value	_	-	System
§ [8]	CH1 User range settings thermal EMF offset value (L) CH1 User range settings thermal EMF offset value (H)		-	System
\$ [9] \$ [10] \$ [11]	CH1 User range settings thermal EMF gain value (L) CH1 User range settings thermal EMF gain value (L)		_	System
⑤[12]	CH2 Factory default offset value	_	_	System
⑤[12]	CH2 Factory default gain value	_	_	System
⑤[13] ⑤[14]	CH2 User range settings offset value	_	_	System
<u>৩</u> [1+] (\$[15]	CH2 User range settings gain value	_	_	System
⑤[16]	CH2 User range settings thermal EMF offset value (L)			- ,
⑤[17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
<u></u>	CH2 User range settings thermal EMF gain value (L)			
<u>\$</u> [19]	CH2 User range settings thermal EMF gain value (H)		-	System
\$ [20]	CH3 Factory default offset value	_	-	System
\$[21]	CH3 Factory default gain value	_	-	System
\$[22]	CH3 User range settings offset value	_	-	System
\$ [23]	CH3 User range settings gain value	_	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)			Sustam
s [25]	CH3 User range settings thermal EMF offset value (H)	_	-	System
\$ [26]	CH3 User range settings thermal EMF gain value (L)			System
ঙ [27]	CH3 User range settings thermal EMF gain value (H)	_	-	System
\$[28]	CH4 Factory default offset value	_	-	System
\$ [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
<u></u> \$[31]	CH4 User range settings gain value	-	_	System
s [32]	CH4 User range settings thermal EMF offset value (L)	_	_	System
s [33]	CH4 User range settings thermal EMF offset value (H)			
s [34]	CH4 User range settings thermal EMF gain value (L)	_	_	System
s [35]	CH4 User range settings thermal EMF gain value (H)			C Jotom

(12) Q68TD-G-H02(H01)

Control data of Q68TD-G-H02(H01) (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
⑤ [2]	System area	_	_	_
\$[3]				
⑤ [4]	CH1 Factory default offset value	_	-	System
\$[5]	CH1 Factory default gain value	-	-	System
\$[6]	CH1 User range settings offset value	-	-	System
\$[7]	CH1 User range settings gain value	_	-	System
\$[8]	CH1 User range settings thermal EMF offset value (L)	_	_	System
s [9]	CH1 User range settings thermal EMF offset value (H)			ejetetti
s [10]	CH1 User range settings thermal EMF gain value (L)	_	_	System
S[11]	CH1 User range settings thermal EMF gain value (H)			Cystem
S [12]	CH2 Factory default offset value	-	-	System
<u>ি</u> [13]	CH2 Factory default gain value	-	-	System
ি [14]	CH2 User range settings offset value	_	-	System
\$ [15]	CH2 User range settings gain value	_	-	System
s[16]	CH2 User range settings thermal EMF offset value (L)			Sustam
S[17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
s[18]	CH2 User range settings thermal EMF gain value (L)			Sustam
s [19]	CH2 User range settings thermal EMF gain value (H)	_	-	System
<u>\$</u> [20]	CH3 Factory default offset value	_	-	System
<u> </u>	CH3 Factory default gain value	_	-	System
s [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)			Queters
s [25]	CH3 User range settings thermal EMF offset value (H)	-	-	System
<u>s</u> [26]	CH3 User range settings thermal EMF gain value (L)			<u> </u>
s [27]	CH3 User range settings thermal EMF gain value (H)	-	-	System
s [28]	CH4 Factory default offset value	_	-	System
s [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	_	-	System
s[31]	CH4 User range settings gain value	_	-	System
⑤ [32]	CH4 User range settings thermal EMF offset value (L)			<u> </u>
s [33]	CH4 User range settings thermal EMF offset value (H)	-	-	System
\$[34]	CH4 User range settings thermal EMF gain value (L)			
s [35]	CH4 User range settings thermal EMF gain value (H)	-	-	System
<u> </u>	CH5 Factory default offset value	-	_	System
<u>\$</u> [37]	CH5 Factory default gain value	_	-	System
\$ [38]	CH5 User range settings offset value	_	_	System
[39] [39]	CH5 User range settings gain value	_	_	System

Device	Item	Setting data	Setting range	Setting side
s [40]	CH5 User range settings thermal EMF offset value (L)			System
\$[41]	CH5 User range settings thermal EMF offset value (H)	_	_	Oystern
s [42]	CH5 User range settings thermal EMF gain value (L)			System
<u></u> ال	CH5 User range settings thermal EMF gain value (H)	_	_	Oystern
⑤ [44]	CH6 Factory default offset value	_	-	System
s [45]	CH6 Factory default gain value	_	-	System
s [46]	CH6 User range settings offset value	_	-	System
s [47]	CH6 User range settings gain value	_	-	System
s [48]	CH6 User range settings thermal EMF offset value (L)	_	_	System
ঙ [49]	CH6 User range settings thermal EMF offset value (H)	_	_	Oystern
ঙ [50]	CH6 User range settings thermal EMF gain value (L)			System
<u></u> ال	CH6 User range settings thermal EMF gain value (H)	_	_	Oystern
s [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
s [55]	CH7 User range settings gain value	_	-	System
s [56]	CH7 User range settings thermal EMF offset value (L)	_	_	System
ঙ [57]	CH7 User range settings thermal EMF offset value (H)	_		Oystern
ঙ [58]	CH7 User range settings thermal EMF gain value (L)	_	_	System
ঙ [59]	CH7 User range settings thermal EMF gain value (H)	_		Oystern
s [60]	CH8 Factory default offset value	-	-	System
s[61]	CH8 Factory default gain value	-	-	System
s [62]	CH8 User range settings offset value	-	-	System
⑤ [63]	CH8 User range settings gain value	_	_	System
⑤ [64]	CH8 User range settings thermal EMF offset value (L)			System
s [65]	CH8 User range settings thermal EMF offset value (H)	_	_	Gystem
\$[66]	CH8 User range settings thermal EMF gain value (L)	_	_	System
s [67]	CH8 User range settings thermal EMF gain value (H)	_	_	Gystern

Control data of Q68TD-G-H02(H01) (2/2)

(13) Q68RD3-G

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
\$[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
ঙ[2] (হ) (হ)	- System area	-	-	_
⑤ [4]	CH1 Factory default offset value	_	-	System
⑤ [5]	CH1 Factory default gain value	_	-	System
⑤[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤[8]	CH1 User range settings resistance offset value (L)			Quarterin
⑤ [9]	CH1 User range settings resistance offset value (H)		-	System
<u>©</u> [10]	CH1 User range settings resistance gain value (L)			Ourstan-
⑤ [11]	CH1 User range settings resistance gain value (H)	-	-	System
s [12]	CH2 Factory default offset value	_	-	System
s [13]	CH2 Factory default gain value	-	-	System
⑤ [14]	CH2 User range settings offset value	_	-	System
⑤ [15]	CH2 User range settings gain value	_	-	System
s [16]	CH2 User range settings resistance offset value (L)			Sustam
s[17]	CH2 User range settings resistance offset value (H)	_	_	System
⑤ [18]	CH2 User range settings resistance gain value (L)			Quatara
s [19]	CH2 User range settings resistance gain value (H)	_	_	System
s [20]	CH3 Factory default offset value	-	-	System
s [21]	CH3 Factory default gain value	-	-	System
\$ [22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
ঙ [24]	CH3 User range settings resistance offset value (L)			System
s [25]	CH3 User range settings resistance offset value (H)	_	-	System
s [26]	CH3 User range settings resistance gain value (L)			System
s [27]	CH3 User range settings resistance gain value (H)		_	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
<u></u> آ [31]	CH4 User range settings gain value	-	-	System
s [32]	CH4 User range settings resistance offset value (L)			System
s [33]	CH4 User range settings resistance offset value (H)	-	_	System
s [34]	CH4 User range settings resistance gain value (L)			System
<u> জ</u> [35]	CH4 User range settings resistance gain value (H)		_	Gystein
s [36]	CH5 Factory default offset value	-	-	System
<u></u> آ [37]	CH5 Factory default gain value	-	_	System
s [38]	CH5 User range settings offset value	-	-	System

Control data of Q68RD3-G (2/2)

Device	Item	Setting data	Setting range	Setting side
s [39]	CH5 User range settings gain value	-	-	System
s [40]	CH5 User range settings resistance offset value (L)			System
<u>ি</u> [41]	CH5 User range settings resistance offset value (H)			
<u></u> [42]	CH5 User range settings resistance gain value (L)		-	System
<u></u> [43]	CH5 User range settings resistance gain value (H)			
<u></u> ال	CH6 Factory default offset value	-	-	System
<u></u> ال	CH6 Factory default gain value	-	-	System
s [46]	CH6 User range settings offset value	-	-	System
s [47]	CH6 User range settings gain value	-	-	System
⑤ [48]	CH6 User range settings resistance offset value (L)			System
s [49]	CH6 User range settings resistance offset value (H)	_	_	System
s [50]	CH6 User range settings resistance gain value (L)		-	System
<u>জ</u> [51]	CH6 User range settings resistance gain value (H)	_		
s [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
<u></u> (54]	CH7 User range settings offset value	_	-	System
<u></u> ال	CH7 User range settings gain value	_	-	System
<u></u> ال	CH7 User range settings resistance offset value (L)		_	System
<u></u> [57]	CH7 User range settings resistance offset value (H)	_		
s [58]	CH7 User range settings resistance gain value (L)		-	System
s [59]	CH7 User range settings resistance gain value (H)	_		
s [60]	CH8 Factory default offset value	_	-	System
<u></u> ا(61)	CH8 Factory default gain value	_	-	System
<u></u> [62]	CH8 User range settings offset value	_	-	System
<u>ি</u> [63]	CH8 User range settings gain value	-	-	System
<u>ি</u> [64]	CH8 User range settings resistance offset value (L)		– Sy	
s [65]	CH8 User range settings resistance offset value (H)	-		System
s [66]	CH8 User range settings resistance gain value (L)			Quatant
s[67]	CH8 User range settings resistance gain value (H)	-	-	System

(14) Q61LD^{*1}

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	System
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
\$[2] \$[3]	- System area	-	-	System
⑤ [4]	Load cell rated capacity (L)	-	-	System
s [5]	Load cell rated capacity (H)	-	-	System
\$[6]	Load cell rated output	-	-	System
⑤ [7]	Number of load cells in connection	-	-	System
⑤[8]	Zero offset	-	-	System
⑤ [9]	System area	-	-	System
s[10]	Maximum weighing capacity setting (L)	-	-	System
S[11]	Maximum weighing capacity setting (H)	-	-	System
s [12]	Minimum division	-	-	System
s [13]	Decimal point position	-	-	System
⑤ [14]	Unit	-	-	System
<u>\$</u> [15]	System area	-	-	System
⑤ [16]	Standard weight setting (L)	_	-	System
s [17]	Standard weight setting (H)	_	-	System
S[18]	Installation site gravitational acceleration (L)	_	-	System
s [19]	Installation site gravitational acceleration (H)	_	-	System
s [20]	Calibration site gravitational acceleration (L)	_	-	System
s[21]	Calibration site gravitational acceleration (H)	_	-	System
s [22]	Digital output zero correction value (L)	_	-	System
s [23]	Digital output zero correction value (H)	_	-	System
s [24]	Digital output span correction value (L)	_	-	System
s [25]	Digital output span correction value (H)	_	-	System
\$[26] to \$[33]	System area	-	-	System
\$[34]	Instrumentation amplifier gain setting	_	-	System
\$[35]	A/D converter gain setting	_	-	System
\$[36]	Zero offset output value (L)	_	-	System
\$[37]	Zero offset output value (H)	_	-	System
\$[38]	Two-point zero calibration value (L)	_	-	System
\$[39]	Two-point zero calibration value (H)	_	-	System
<u>\$</u> [40]	Two-point span calibration value (L)	_	-	System
<u>\$[41]</u>	Two-point span calibration value (H)	_	-	System
S [42] to S [53]	System area	-	-	System
⑤ [53] ⑤ [54]	1.0mV/V zero calibration value (L)	_	_	System
[]	1.0mV/V zero calibration value (L)			System

Control data of Q61LD (2/2)

Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
\$[57]	1.0mV/V span calibration value (H)	-	-	System
\$ [58]	2.0mV/V zero calibration value (L)	_	-	System
ঙ [59]	2.0mV/V zero calibration value (H)	_	-	System
\$[60]	2.0mV/V span calibration value (L)	-	-	System
s[61]	2.0mV/V span calibration value (H)	_	-	System
s [62]	3.0mV/V zero calibration value (L)	_	-	System
\$[63]	3.0mV/V zero calibration value (H)	_	-	System
\$[64]	3.0mV/V span calibration value (L)	_	-	System
s [65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
s [85]				

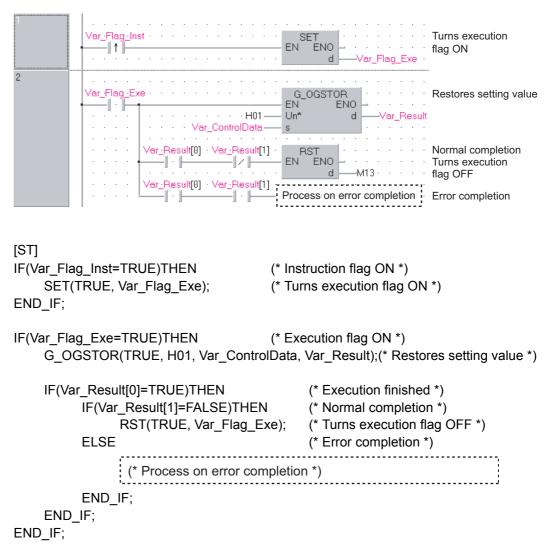
*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(15) L60AD4/L60DA4

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	-	-	-
ি [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Stored data type setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH4CH3CH2CH1	0000н to 000Fн	System
⑤ [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
§ [5]	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§ [8]	CH3 Industrial shipment settings offset value	_	-	System
ঙ [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH1 User range settings offset value	_	-	System
<u></u> §[13]	CH1 User range settings gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	_	-	System
S[17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	_	-	System

Program Example

The following program restores the offset/gain setting value to the A/D converter module mounted on the I/O numbers from X/Y10 to X/Y1F when the flag turns ON.

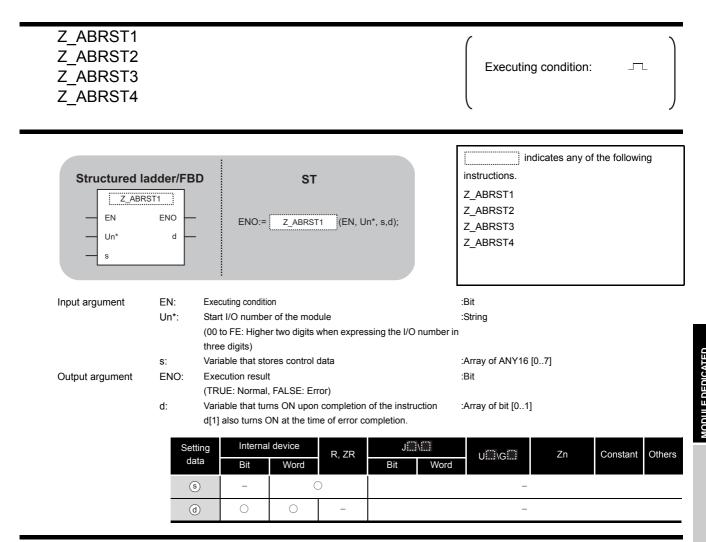


[Structured ladder/FBD]

5.2 Positioning Instruction

5.2.1 ABRST instruction

Z_ABRST1



Grant Function

This instruction restores the absolute position of the specified axis. (Refer to the following)

- Z_ABRST1: Axis 1
- Z_ABRST2: Axis 2
- Z_ABRST3: Axis 3
- Z_ABRST4: Axis 4

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
<u></u> ۱]	Completion status	 The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code) 	_	System
ঙ [2]	Receive signal from servo amplifier	 Write the following signal status read from the servo amplifier to the input module. b0: ABS data bit0 b1: ABS data bit1 b2: Send data READY flag 	b0: 0/1 b1: 0/1 b2: 0/1	User
ঙ [3]	Send signal to servo amplifier	The ON/OFF status of the following data, that are calculated by the dedicated instructions on the basis of "receive signal from servo amplifier" and output to the amplifier, are stored. • b0: Servo ON • b1: ABS transfer mode • b2: ABS request flag	_	System
ঙ [4]	Status	Communication status with the servo amplifier • 0 : Communication completed (Set by the user at the start of communication) • Other than 0: During communication (Stored by the system.)	0	User/ System
\$ [5] to \$ [7]	System area	-	_	_

Program Example

The following program restores the absolute position of the axis 1.

The devices from X47 to X49 and from Y50 to Y52 are used for the communication with the servo amplifier.

X47: ABS data bit0

- X48: ABS data bit1
- X49: Send data READY flag
- Y50: Servo ON
- Y51: ABS transfer mode
- Y52: ABS request flag

[Structured ladder/FBD]

2	SM400	Absolute position restoration pulse
2	Var_Flag_Inst X0	Turns absolute position restoration memory ON Clears completion
	EN BOY ENO	status
3	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns the servo ON with the data to be sent to the servo amplifier
	Var_Result[1] EN EN EN S dD49	Sets completion status to error code
	AND= EN ENO Var_ControlData[4] s2	Turns absolute position restoration memory OFF
4	Var_Flag_Mem··X47·····BSET BSET EN ENO n d Var_ControlData[2]	Sets ABS data Sets ABS data in data b0 received from the servo
	×48 · · · · EN ENO - Ver_ControlDeta[2]	Sets ABS data in data b1
		Sets send data ready flag in data b2
	Z_ABRST1 EN ENO Un d Var_ControlData s	Restores absolute position

Z_ABRST1

[ST] PLS(SM400, Var_Flag_Inst); (* Absolute position restoration pulse *) IF((Var_Flag_Inst=TRUE) & (X0=FALSE))THEN SET(TRUE, Var Flag Mem); (* Turns absolute position restoration memory ON *) (* Clears completion status *) MOV(TRUE, 0, Var_ControlData[4]); END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) MOV(TRUE, Var ControlData[3], K1Y50); (* Turns the servo ON with the data to be sent to the servo amplifier *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[4], Var_ErrorCode); (* Sets completion status to error code *) END_IF; IF(Var_ControlData[4]=0)THEN RST(TRUE, Var_Flag_Mem); (* Turns absolute position restoration memory OFF *) END IF; END IF; IF(Var_Flag_Mem=TRUE)THEN (* absolute position restoration memory ON *) (* Sets ABS data *) BSET(X47, 0, Var_ControlData[2]); (* Sets ABS data in data b0 received from the servo *) BSET(X48, 1, Var ControlData[2]); (* Sets ABS data in data b1 received from the servo *) BSET(X49, 2, Var_ControlData[2]); (* Sets send data ready flag in data b2 received from the servo *) Z_ABRST1(TRUE, "00", Var_ControlData, Var_Result); (* Restores absolute position *)

END_IF;

5.2.2 PSTRT instruction

ZP_PSTRT1

ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4		Executing condition :
Structured la EN Un* s		instructions. ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4
Input argument	 EN: Executing condition Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O three digits) 	:Bit :String) number in
Output argument	s: Variable that stores control data ENO: Execution result (TRUE: Normal, FALSE: Error) d: Variable that turns ON upon completion of the instrud[1] also turns ON at the time of error completion.	:Array of ANY16 [02] :Bit uction :Array of bit [01]
	Setting data Internal device R, ZR J Bit Word Bit Bit	Word UIII\GIII Zn Constant Others
	d 0 0 -	-

Grant Function

This instruction starts positioning of the specified axis. (Refer to the following.)

- ZP_PSTRT1: Axis 1
- ZP_PSTRT2: Axis 2
- ZP_PSTRT3: Axis 3
- ZP_PSTRT4: Axis 4

5

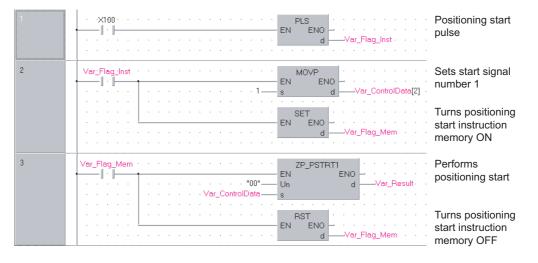
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Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
\$[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System
(٤ [2]	Start No.	Specify the following data number to be started by the PSTRT instruction. 1 to 600 : Positioning data number 7000 to 7004 : Block start 9001 : Machine OPR 9002 : Fast OPR 9003 : Current value change 9004 : Multiple axes concurrent start	1 to 600, 7000 to 7004, 9001 to 9004	User

Program Example

The following program executes the positioning start of the positioning data number 1 when X100 turns ON.



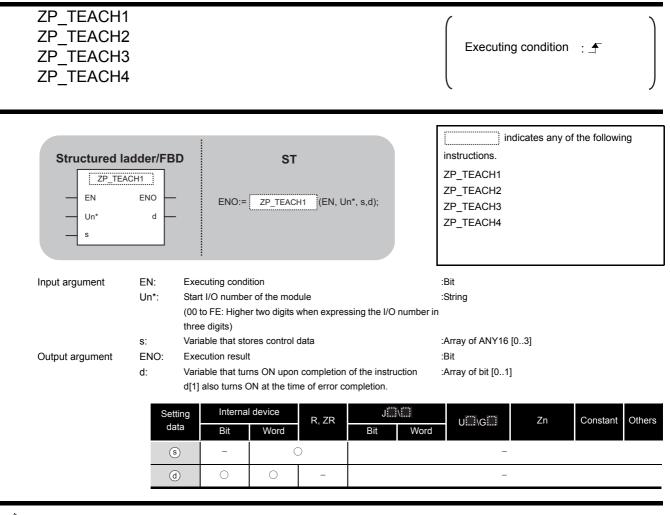
[Structured ladder/FBD]

[ST]

PLS(X100, Var_Flag_Inst); (* Positioning start pulse *) IF(Var_Flag_Inst=TRUE)THEN MOVP(TRUE, 1, Var_ControlData[2]);(* Sets start signal number 1 *) SET(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory ON *) END_IF; IF(Var_Flag_Mem=TRUE)THEN (* Positioning start instruction memory ON *) ZP_PSTRT1(TRUE, "00", Var_ControlData, Var_Result); (* Performs positioning start *) RST(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory OFF *) END_IF;

5.2.3 TEACH instruction

ZP_TEACH1



☆ Function

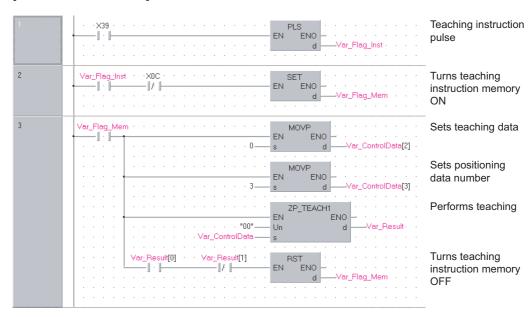
This instruction performs teaching for the specified axis. (Refer to the following)

- ZP_TEACH1: Axis 1
- ZP_TEACH2: Axis 2
- ZP_TEACH3: Axis 3
- ZP_TEACH4: Axis 4

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	_	-
\$[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	-	System
\$[2]	Teaching data selection	 Set the address (positioning address/circular address) to which the current feed value is written. 0: Write the current feed value to the positioning address 1: Write the current feed value to the circular address 	0,1	User
ঙ [3]	Positioning data No.	Set the positioning data number for which teaching is performed.	1 to 600	User

Program Example

The following program performs teaching for the positioning data number 3 of the axis 1 when X39 turns ON.



[Structured ladder/FBD]

[ST]

PLS(X39, Var_Flag_Inst);

(* Teaching instruction pulse *)

```
IF((Var Flag Inst=TRUE)&(X0C=FALSE))THEN
```

SET(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory ON *) END_IF;

IF(Var_Flag_Mem=TRUE)THEN	(* Teaching	instruction memory ON *)
MOVP(TRUE, H0, Var_Control	Data[2]);	(* Sets teaching data *)
MOVP(TRUE, K3, Var_Controll	Data[3]);	(* Sets positioning data number *)

ZP_TEACH1(TRUE, "00", Var_ControlData, Var_Result);

(* Performs teaching *)

IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN RST(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory OFF *) END_IF; END_IF;

5.2.4 PFWRT instruction

ZP_PFWRT

ZP_PFWRT			Executing condition :
Structured I		ST := ZP_PFWRT (EN, Un*	*, s,d);
Input argument	(00 to FE: Hig three digits) s: Variable that ENO: Execution res d: Variable that	ber of the module her two digits when express stores control data	:Array of ANY16 [01] :Bit of the instruction :Array of bit [01]
	Setting dataInter Bit(s)-(d)()	Word R, ZR	JIII UIII GIII Zn Constant Other Bit Word – –

Grant Function

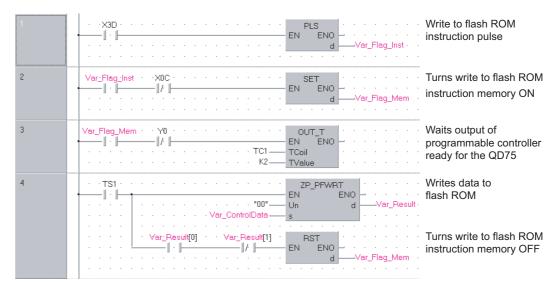
This instruction writes the QD75 parameters, positioning data, and block start data to the flash ROM.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	-	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	O : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Program Example

The following program writes the parameters, positioning data, and block start data stored in buffer memory to the flash ROM when X3D turns ON.



[Structured ladder/FBD]

[ST]

PLS(X3D, Var_Flag_Inst); (* Write to flash ROM instruction pulse *) IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN

SET(TRUE, Var_Flag_Mem); (* Turns write to flash ROM instruction memory ON *) END_IF;

IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN OUT T(TRUE, TC1, 2);

(* Waits output of programmable controller ready for the QD75 *)

END_IF;

```
IF(TS1=TRUE)THEN (* Write to flash ROM instruction memory ON *)
ZP_PFWRT(TRUE, "00", Var_ControlData, Var_Result);
(* Writes data to flash ROM *)
IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN
```

RST(TRUE, Var_Flag_Mem);

(* Turns write to flash ROM instruction memory OFF *)

END_IF; END_IF; 5

5.2.5 PINIT instruction

ZP_PINIT

ZP_PINIT			Executing condition :
Structured I EN Un* s		SD ST ENO:= ZP_PINIT (EN, Un*, s,d);	ZP_PINIT
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number three digits)	:Bit :String r in
Output argument	s: ENO: d:	Variable that stores control data Execution result Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Array of ANY16 [01] :Bit :Array of bit [01]
	da (tting Internal device R, ZR JIII	U∭\G∭ Zn Constant Others
	_		

C Function

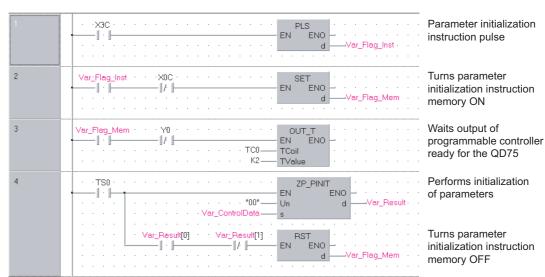
This instruction initializes the QD75 setting data.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	O : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Program Example

The following program initializes the parameters of buffer memory and those of flash ROM when X3C turns ON.



[Structured ladder/FBD]



PLS(X3C, Var_Flag_Inst); (* Parameter initialization instruction pulse *)

```
IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN
    SET(TRUE, Var_Flag_Mem);
                      (* Turns parameter initialization instruction memory ON *)
END_IF;
IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN
    OUT T(TRUE, TC0, 2);
                      (* Waits output of programmable controller ready for the QD75 *)
END_IF;
IF(TS0=TRUE)THEN
                      (* Parameter initialization instruction memory ON *)
    ZP_PINIT(TRUE, "00", Var_ControlData, Var_Result);
                      (* Performs initialization of parameters *)
    IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN
          RST(TRUE, Var_Flag_Mem);
                      (* Turns parameter initialization instruction memory OFF *)
    END_IF;
END_IF;
```

5.3 Serial Communication

5.3.1 ONDEMAND instruction

G_ONDEMAND

						Serial
G(P)_ONDE	MAND				P: Executing cond	lition : 🛧 🔵
Structured Ia G_ONDE EN Un* s1 s2			ST	*, s1, s2, d);	instructions. G_ONDEMAND	s any of the following GP_ONDEMAND
Input argument	EN: Un*: s1: s2:	(00 to FE: High three digits) Variable that st Start number of	er of the module er two digits when exp ores control data f the device that stores		:Array of ANY16 [02] :ANY16	
Output argument	ENO: d:	d[1] also turns	rns ON upon completi ON at the time of error ternal device t Word		:Bit :Array of bit [01]	Zn Constant Others
		(d) C			-	

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction sends data using the on-demand function of MC protocol.

Device	Item	Setting data	Setting range	Setting side
(1) Transmission channel		Set the transmission channel.		
		1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side)		
		The instruction completion status is stored.		
s1[1]	Transmission result	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends data of devices from D10 to D11 using the on-demand function.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	· · ·×53 · · · · · · · · · · · · · · · · · · ·	On-demand transmission instruction pulse
2	Ver_Frag_Inst MOV EN EN EN s d Var_ControlData[0]	Sets transmission channel to 1
	EN MOV s d	Sets number of send data to 2 words
	H1234 EN ENO B D10	Sets send data to D10 to D11
	H5678 BNO D11	
	EN ENO dVar_Flag_Normal	Turns normal completion flag OFF
	EN ENO d	Turns error completion flag OFF
	EN ENO d Var_Flag_Exe	Turns execution flag ON
3	Var_Flag_Exe GP_ONDEMAND Image: Sector of the sector	Performs on-demand function transmission
4	Var_Result[0] Var_Result[1] SET	Turns normal completion flag ON
	····· ····· SET ····· ····· EN ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ······ ····· ······ ····· ····· <	Turns error completion flag ON
	EN ENO	Turns execution flag OFF

[ST]	
PLS(X53, Var_Flag_Inst);	(* On-demand transmission instruction pulse *)
IF(Var_Flag_Inst=TRUE)THEN	(* Instruction flag ON *)
MOV(TRUE, 1, Var_ControlData[0]);	(* Sets transmission channel to 1 *)
MOV(TRUE, 2, Var ControlData[2]);	(* Sets number of send data to 2 words *)
MOV(TRUE, H1234, D10);	(* Sets send data to D10 to D11 *)
MOV(TRUE, H5678, D11);	(, ,
RST(TRUE, Var_Flag_Normal);	(* Turns normal completion flag OFF *)
RST(TRUE, Var_Flag_Error);	(* Turns error completion flag OFF *)
SET(TRUE, Var Flag Exe);	(* Turns execution flag ON *)
END IF;	
IF(Var_Flag_Exe=TRUE)THEN	(* Execution flag ON *)
GP ONDEMAND(TRUE, H0, Var Co	ι σ ,
	(* Performs on-demand function transmission *)
END IF;	(
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
SET(TRUE, Var Flag Normal);	· · · ·
ELSE	(* Error completion *)
	. ,
SET(TRUE, Var_Flag_Error);	(* Turns error completion flag ON *)
END_IF;	
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

- 1. The communication status can be checked by the SPBUSY instruction. \bigcirc Section 5.3.6
- 2. Specify the capacity of the send data (stored in devices from D10 to D11 in the program example above) and the number of send data within the user-defined buffer memory range assigned for the on-demand function.

DDULE DEDICATED STRUCTION **G**

5.3.2 OUTPUT instruction

G_OUTPUT

Serial

ST ENO:= G_OUTPUT (EN, Un*, s1, s2, d); executing condition	indicates any of the following instructions. G_OUTPUT GP_OUTPUT :Bit :ANY16
	:ANY16
0 to FE: Higher two digits when expressing the I/O num ree digits)	
ariable that stores control data	:Array of ANY16 [02]
art number of the device that stores send data xecution result	:ANY16 :Bit
ariable that turns ON upon completion of the instruction 1] also turns ON at the time of error completion.	
	Word UIII\GIII Zn Constant Others
s) – O	
	_
	ta *1 Bit Word Bit Bit

Grant Function

This instruction sends data in the message format specified by the user using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
(9) [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
st][1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends data of devices from D11 to D15 using the nonprocedural protocol. (For the Q series C24 whose I/O signals are X/Y00 to X/Y1F) [Structured ladder/FBD]

1	·x20 · · · · · · · · · · · · · · · · · · ·	Transmission instruction pulse
2	Var_Flag_Inst	Sets send data
	H0A0D s d D15	Sets completion code
	MOV EN ENO Var_ControlData[0]	Sets transmission channel to 1
	MOV EN S d Var_ControlData[2]	Sets number of send data to 5 words
	G_OUTPUT EN ENO Un* d S1 S2	Sends data
3	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
	· Var_Result[1] MOV · Var_ControlData[1] EN · Var_ErrorCode	Stores error code
	····· ·····	Turns error completion flag ON
4	-X21 - RST - RST - A A A A A A A A A A A A A A A A A A	Turns normal completion flag OFF
	RST EN ENO d Var_Flag_Error	Turns error completion flag OFF

[ST]	
PLS(X20, Var_Flag_Inst);	(* Transmission instruction pulse*)
IF (Var_Flag_Inst=TRUE) THEN MOV(TRUE, H4241, D11); MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0AD, D15); MOV(TRUE, 1, Var_ControlData[0]); MOV(TRUE, 5, Var_ControlData[2]);	(* Sets send data *) (* Sets transmission channel to 1 *) (* Sets number of send data to 5 words *)
G_OUTPUT(TRUE, H0, Var_ControlData, E	_ /
END IF;	(* Sends data *)
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE MOV(TRUE, Var_ControlData[1], Var SET(TRUE, Var_Flag_Error); END_IF; END_IF;	
IF (X21=TRUE) THEN RST(TRUE, Var_Flag_Normal); RST(TRUE, Var_Flag_Error); END_IF;	(* Turns normal completion flag OFF *) (* Turns error completion flag OFF *)

5.3.3 INPUT instruction

G_INPUT



G_INPUT

Structured la G_INP EN Un* s			=NO:= <u>G</u> _	ST	, Un*, s, d1, r	12);		indicat ructions. NPUT	es any of t	he following
Input argument	EN:	Executing	g condition	I			:Bit			
	Un*:	Start I/O	Start I/O number of the module				:ANY	(16		
		(00 to FE	: Higher tw	o digits whe	n expressing	the I/O nun	nber in			
		three digi	,							
	S:			control data				y of ANY16 [03]		
Output argument	ENO:	Execution					:Bit			
	d1:				stores receiv		:ANY			
	d2:			•	npletion of th		n :Arra	y of bit [01]		
		d2[1] also	o turns ON	at the time of	of error comp	oletion.				
		Setting	Interna	al device	R, ZR	J		U	Zn	Constant Oth
		data ^{*1}	Bit	Word	Ν, ΖΝ	Bit	Word	0:	211	oonstant Oth
	Ī	\$	-	(0			_		
		dl	-	(С			-		
		-								

Grant Function

This instruction receives data in the message format specified by the user using the nonprocedural protocol.

5

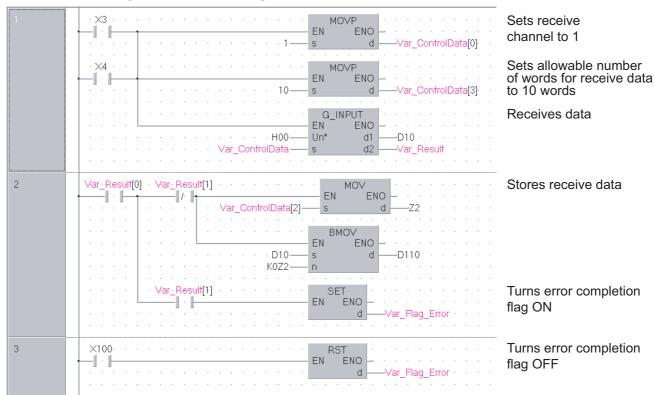
LE DEDICATED UCTION

Device	Item	Setting data	Setting range	Setting side
s [0]	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
ঙ[1]	Reception result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
\$ [2]	Number of receive data	The number of receive data are stored.	0 or more	System
⑤ [3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in $\textcircled{0}$.	1 or more	User

Program Example

The following program stores data which are received using the nonprocedural protocol in the devices starting from D10.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



[Structured ladder/FBD]

```
[ST]
IF((X3=TRUE) OR (X4=TRUE))THEN
    MOVP(TRUE, 1, Var_ControlData[0]);
                                              (* Sets receive channel to 1 *)
    MOVP(TRUE, 10, Var_ControlData[3]);
                      (* Sets allowable number of words for receive data to 10 words *)
    G_INPUT(TRUE, H0, Var_ControlData, D10, Var_Result);
                                                    (* Receives data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                                    (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                                    (* Normal completion *)
          MOV(TRUE, Var_ControlData[2], Z2);
          BMOV(TRUE, D10, K0Z2, D110);
                                                    (* Stores receive data *)
    ELSE
                                                    (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                                    (* Turns error completion flag ON *)
    END_IF;
END IF;
IF(X100=TRUE)THEN
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

5.3.4 BIDOUT instruction

G_BIDOUT

Serial

G(P)_BIDOU	JT					P: Executing condit	ion : _
Structured Ia G_BID EN Un* s1 s2			ENO:= G_E	ST IDOUT (EN ,Un* ,s1 ,s	2 ,d);	indicates instructions. G_BIDOUT	any of the following
Input argument	EN: Un*:	Start I/O	-	he module digits when expressing	g the I/O number	:Bit :ANY16 : in	
	s1:		that stores of			:Array of ANY16 [02]	
	s2: ENO:	Start nui Executio		levice that stores send	data	:ANY16 :Bit	
Output argument	ENO: d:			N upon completion of t	he instruction	:Bit :Array of bit [01]	
				the time of error comp		-, []	
		Setting data ^{*1}	Interna Bit	device R, ZR Word	J\ Bit	Uiiii\Giiii Word	Zn Constant Others
		(s1)	-	0		_	
		s2	-	0		_	
	-	d	0	0	1		

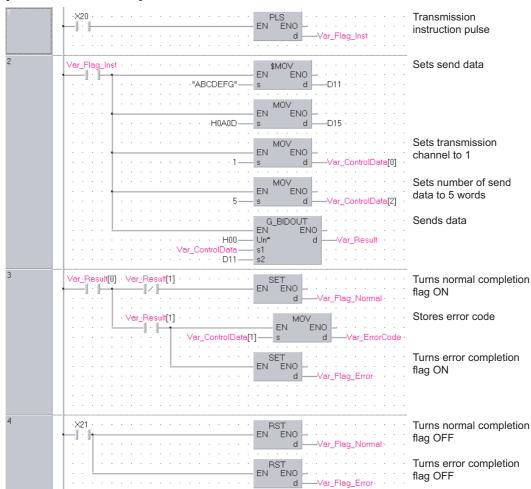
This instruction sends data using the bidirectional protocol.

Device	Item	Setting data	Setting range	Setting side
s1 [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
st][1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends desired data stored in devices from D11 to D15 using the bidirectional protocol.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



[Structured ladder/FBD]

G_BIDOUT

[ST] PLS(X20, Var_Flag_Inst); (* Transmission instruction pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, H4241, D11); (* Sets send data *) MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0AD, D15); MOV(TRUE, 1, Var_ControlData[0]); (* Sets transmission channel to 1 *) MOV(TRUE, 5, Var ControlData[2]); (* Sets allowable number of words for send data to 5 words *) G_BIDOUT(TRUE, H0, Var_ControlData, D11, Var_Result); (* Sends data *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error); END IF; END_IF; IF(X21=TRUE)THEN RST(TRUE, Var_Flag_Normal); (* Turns normal completion flag OFF *) RST(TRUE, Var_Flag_Error); (* Turns error completion flag OFF *) END_IF;

G_BIDIN

Serial

5.3.5 BIDIN instruction

G(P)_BIDIN P: Executing condition : 🕈 indicates any of the following Structured ladder/FBD instructions. ST G_BIDIN GP_BIDIN G_BIDIN ΕN ENO ENO:= G_BIDIN (EN, Un*, s, d1, d2); Un* d1 d2 s :Bit Input argument EN: Executing condition Un*: :ANY16 Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..3] s: Output argument ENO: Execution result :Bit :ANY16 d1: Start number of the device that stores receive data d2: :Array of bit [0..1] Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion. Setting Internal device J...\... R, ZR U....\G.... Others Zn Constant data *1 Bit Word Word Bi s d1) _ _ d2 _ *1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction receives data using the bidirectional protocol.

Device	Item	Setting data	Setting range	Setting side
⑤[0]	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
s [1]	Reception result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ [2]	Number of receive data	The number of received data are stored.	1 or more	System
ি[3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in $\textcircled{0}$.	1 or more	User

Program Example

The following program receives data using the bidirectional protocol and stores the data in the devices starting from D10.

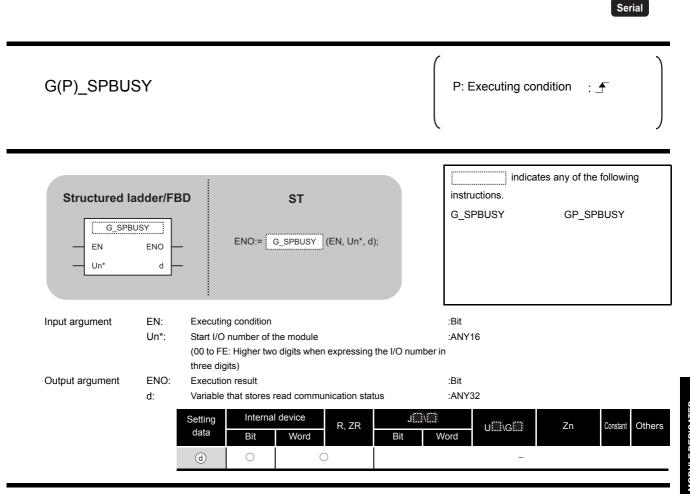
(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

1	MOVP Image: Stress of the s	Sets receive channel to 1
	EN ENO s d	Sets allowable number of words for receive data to 10 words
	G_BIDIN EN ENO Un* d1 D10 Var_ControlData s d2 Var_Result	Receives data
2	Var_Result[0] Var_Result[1] MOV I I II III IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
		Stores receive data
MC MC	DVP(TRUE, 10, Var_ControlData[3]); (* Sets allowable number of words for receive	e channel to 1 *) data to 10 *)
G_ END_IF	_BIDIN(TRUE, H00, Var_ControlData, D10, Var_Result); (* Receives d ; ;	ata *)
IF((Var_ END_IF	_Result[0]=TRUE) & (Var_Result[1]=FALSE))THEN BMOV(TRUE, D10, Var_ControlData[2], D110);(* Stores re ;;	ceive data *)

[Structured ladder/FBD]

G_SPBUSY

5.3.6 SPBUSY instruction



Grant Function

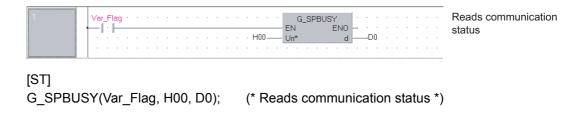
This instruction reads the data transmission/reception status.

Program Example

The following program reads out the communication status of the target module.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]



G_SPBUSY

5.3.7 CSET instruction (receive data clear)

Serial ZP_CSET Executing condition : 1 indicates the following instruction. Structured ladder/FBD ST ZP_CSET ZP_CSET ΕN ENO ENO:= ZP_CSET (EN, Un*, s1, s2, d1, d2); Un³ d1 s1 d2 s2 :Bit Input argument EN: Executing condition Un*: :String Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Channel number that requests receive data clear :ANY16 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) s2: Variable that stores control data :Array of ANY16 [0..111] Execution result :Bit Output argument ENO: d1: Dummy :ANY16 d2: :Array of bit [0..1] Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion. Setting Internal device J....\.... Constant R, ZR U...\G... Zn Others К, Н data *1 Bit Word Bit Word (s1) _ \bigcirc _ \bigcirc _ \bigcirc (s2) _ _ _ 0 d1) _ _ _ _ d2) _ _ _

*1: Local devices and file registers per program cannot be used as setting data.

ZP_CSET

Grant Function

Clears receive data without stopping transmission using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
s2 [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
©[2]	Request type	Specify the request. 4: Receive data clear request	4	User
© [3] to © [111]	For system	-	_	System

Program Example

The following program clears the receive data in the Q series C24 side.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

1		
		Clears execution
	EN EN UN	type to 0
		type to e
	MOVP	
	EN ENO	Sets request type
	l · · · · · · · · · · · · · · · · · · ·	eete requeet type
	· · · · · · · · · · · · · · · · · · ·	
	EN ENO VIENT	Clears data
		Clears data
	· · · · · · · · · · · · · · · · · · ·	
2	Var_Result[0] + Var_Result[1] + + + + + + + + + + SET + + + + + + + + + + + + + + + + + + +	Turns normal completion
		flag ON
	· · · · · · · · · · · · · · · · · · ·	liag ON
	Var Result[1]	
		Turns error completion
	Var Flag Error	flag ON
	· · · · · · · · · · · · · · · · · · ·	-
	MOV	Starsa arren anda
		Stores error code
	······································	
3	· · X21 · · · · · · · · · · · · · · · · · · ·	Turns normal completion
	EN ENO	flag OFF
	d	liag Of I
	· · · · · · · · · · · · · · · · · · ·	
	RST EN ENO	Turns error completion
		flag OFF
		-

[Structured ladder/FBD]

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE, 0, Var_ControlData[0]);
                                              (* Clears execution type to 0 *)
    MOVP(TRUE, 4, Var_ControlData[2]);
                                               (* Sets request type *)
    ZP_CSET(TRUE, "U0", 1, Var_ControlData, Var_Dummy, Var_Result);
                                              (* Clears data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                               (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                               (* Normal completion *)
          SET(TRUE, Var_Flag_Normal);
                                               (* Turns normal completion flag ON *)
    ELSE
                                               (* Error completion *)
          MOV(TRUE, Var_ControlData[1], Var_ErrorCode);
                                              (* Stores error code *)
                                              (* Turns error completion flag ON *)
          SET(TRUE, Var_Flag_Error);
    END_IF;
END IF;
IF(X21=TRUE)THEN
    RST(TRUE, Var_Flag_Normal);
                                               (* Turns normal completion flag OFF *)
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

5.3.8 BUFRCVS instruction

Z_BUFRCVS



Z_BUFRCVS

Structured la EN Un* s			ST Z_BUFRCVS (EN, Un*, s, d);	Z_BUFRCVS	he following instruction.
Input argument	EN:	Executing condition	on	:Bit	
	Un*:	Start I/O number of (00 to FE: Higher number in three d	two digits when expressing the I/	:String O	
	s:	Reception channe 1: Channel 1 (CH 2: Channel 2 (CH	1 side)	:ANY16	
Output argument	ENO:	Execution result)	:Bit	
	d:		e device that stores read data e read from the receive area of b	:ANY16 uffer	
		Setting Inter data ^{*1} Bit	nal device R, ZR B	J∭\∭ it Word U∭\G∭	Zn Constant K, H Other
	1	<u>s</u> –	0	_	0 -
		0 O	0		

Z_BUFRCVS

5

Grant Function

This instruction receives data with an interrupt program during communication using the nonprocedural protocol or bidirectional protocol.

Receive Data

Device	Item	Setting data	Setting range	Setting side
(d) +0	Receive data length	The number of data read from the number of receive	0 or more	System
0 +0		data storage area is stored.		
d)+1				
to	Receive data	Ŭ	-	System
(d)+n		stored in ascending address order.		
to	Receive data	Data read from the receive data storage area are stored in ascending address order.	-	-

Program Example

The following program receives data with an interrupt program.

[Structured ladder/FBD]

1	· · · DX3 · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
2	DX4 · · · DX4 · · · · · · · · · · · · · · · · · · ·	Turns error completion flag ON
3	SM400 SM400 SM400 S SM400 S S	Executes interrupt receive program

[ST]

(* Set the normal/error confirmation flag for the main program *)
(* The main program resets flags *)
SET(DX3, Var_Flag_Normal);
SET(DX4, Var_Flag_Error);
(* Turns error completion flag ON *)

(* Receives data from CH1 and stores the data in devices starting from D200 *) Z_BUFRCVS(SM400, "00", 1, D200); (* Executes interrupt receive program *)

G_PRR

5.3.9 PRR instruction

					Serial
G(P)_PRR				P: Executing c	condition :
Structured I) S ENO:= <u>G_</u> PF		instructions. G_PRR	cates any of the following
Input argument	EN: Un*:	Executing condition Start I/O number of the mo (00 to FE: Higher two digits three digits)	odule s when expressing the I/O nu	:Bit :ANY16 umber in	
Output argument	s: ENO: d:	Variable that stores contro Execution result Variable that turns ON upo d[1] also turns ON at the t	on completion of the instruct	:Array of ANY16 [0. :Bit ion :Array of bit [01]	.4]
		Setting data *1 Bit W (\$ - (d) O	ce R, ZR J ord Bit	Word UII\GII	Zn Constant Others
	- 1			and file registers per progra	m cannot be used as setting data



This instruction sends data by user frame according to the specification in user frame specification area for transmission during communication using the nonprocedural protocol.

G_PRR

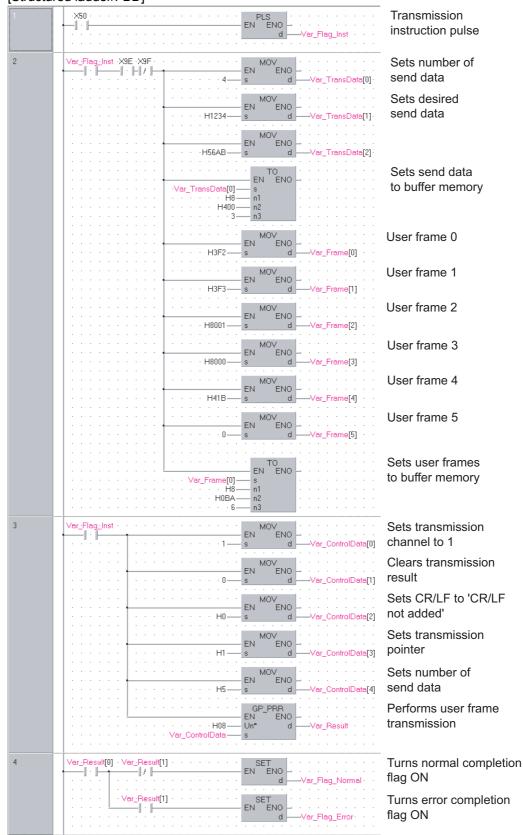
NULE DEDICATED RUCTION **G**

Device	Item	Setting data	Setting range	Setting side
		Set the transmission channel.		
s [0]	Transmission channel	1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side)		
		The instruction completion status is stored.		
⑤ [1]	Transmission result	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
	CR/LF addition specification	Specify whether to add CR/LF codes to the send data		
S [2]		0: CR/LF not added	0, 1	User
		1: CR/LF added		
		Specify the position in the user frame specification		
ঙ [3]	Transmission pointer	area for transmission from where the frame number	1 to 100	User
		data are to be sent.		
⑤ [4]	Number of send data	Set the number of user frames to be sent.	1 to 100	User

Program Example

The following program sends desired data and the user frames from number 1 to number 5 which are registered in the transmission frame setting.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)



[Structured ladder/FBD]

5

[ST] PLS(X50, Var_Flag_Inst); (* Transmission instruction pulse *) IF((Var_Flag_Inst=TRUE) & (X9E=TRUE) & (X9F=FALSE))THEN MOV(TRUE, 4, Var TransData[0]); (* Sets number of send data *) MOV(TRUE, H1234, Var TransData[1]); (* Sets desired send data *) MOV(TRUE, H56AB, Var_TransData[2]); TO(TRUE, Var_TransData[0], H8, H400, 3); (* Sets send data to buffer memory *) MOV(TRUE, H3F2, Var_Frame[0]); (* Sets user frame 0 *) MOV(TRUE, H3F3, Var Frame[1]); (* Sets user frame 1 *) MOV(TRUE, H8001, Var Frame[2]); (* Sets user frame 2 *) MOV(TRUE, H8000, Var_Frame[3]); (* Sets user frame 3 *) MOV(TRUE, H41B, Var Frame[4]); (* Sets user frame 4 *) MOV(TRUE, 0, Var_Frame[5]); (* Sets user frame 5 *) TO(TRUE, Var_Frame[0], H8, H0BA, 6); (* Sets user frames to buffer memory *) END IF; IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var_ControlData[0]); (* Sets transmission channel to 1 *) MOV(TRUE, 0, Var_ControlData[1]); (* Clears transmission result *) MOV(TRUE, H0, Var ControlData[2]); (* Sets CR/LF to 'CR/LF not added' *) MOV(TRUE, H1, Var_ControlData[3]); (* Sets transmission pointer *) MOV(TRUE, H5, Var_ControlData[4]); (* Sets number of send data *) GP PRR(TRUE, H08, Var ControlData, Var Result); (* Performs user frame transmission *) END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF; END_IF;

ZP_CSET

5.3.10 CSET instruction (initial setting)

ZP_CSET Executing condition :: _ Structured ladder/FBD ST Input argument EN EN Executing condition BIL Un* Un* Start 10 number of the module Structured ladder/FBD ST ENO:= 2P_CSET ENO:= 2P_CSET Input argument EN EN: Executing condition BIL Strip (00 to FE:H)Figher two digits where expressing the I/O number in three digits) S1: Reception channel number At 10 number of the module String (00 to FE:H)Figher two digits where expressing the I/O number in three digits) S1: Reception channel number At 2000 Execution result S2: Variable that stores control data At 2000 Execution result S2: Variable that stores control data At 2000 Execution result Bit Word At 2000 Execution result S2: Variable that stores control data At 2000 Execution result At 3000 Execution result St							Seri	ial
Structured ladder/FBD ST U^{n^*} d^{1} U^{n^*} d^{1} s^{2} $ENO:=ZP_CSET$ (EN, Un*, s1, s2, d1, d2); ZP_CSET Input argument EN: Executing condition Bit Un*: Start I/O number of the module String (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Reception channel number ANY16 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) 2: Channel 2 (CH2 side) 22: Variable that stores control data Array of ANY16 [0111] Output argument ENO: Execution result Bit d1: Dummy Array of bit [01] d2[1] also turns ON at the time of error completion. Variable that turns ON upon completion of the instruction Array of bit [01] d2[1] also turns ON at the time of error completion. Setting Internal device R, ZR Bit Word Cm - 0 - - - - - - -	ZP_CSET					Executing condition	: _	
Un*: Start I/O number of the module :String (00 to FE: Higher two digits when expressing the I/O number in three digits) :ANY16 s1: Reception channel number :ANY16 1: Channel 1 (CH1 side) :CH2 side) :Channel 2 (CH2 side) s2: Variable that stores control data :Array of ANY16 [0111] Output argument ENO: Execution result :Bit d1: Dummy :ANY16 d2: Variable that turns ON upon completion of the instruction :Array of bit [01] d2: Variable that turns ON at the time of error completion. :Array of bit [01] d2: Variable that turns ON at the time of error completion. :Array of bit [01] d2: Variable that turns ON at the time of error completion. :Array of bit [01] d2: Internal device R, ZR Image: Complet on the time of error completion. is: - - - - is: - - - - id: Image: Complet on the instruction :Array of bit [01] - id: Image: Complet on the instruction :Array of Complet on the instruction :Array of Comple	EN Un* s1	ENO d1	ENO:=ZP_C		1, d2);	·	wing instru	uction.
s1: Reception channel number :ANY16 1: Channel 1 (CH1 side) :Channel 2 (CH2 side) :Array of ANY16 [0111] S2: Variable that stores control data :Array of ANY16 [0111] Output argument ENO: Execution result :Bit d1: Dummy :ANY16 d2: Variable that turns ON upon completion of the instruction :Array of bit [01] d2[1] also turns ON at the time of error completion. :Array of bit [01] idata 11 Bit Word III (III) ig0 - - - ig0 - - - - ig0 - - - - ig0 - - - - ig1 - - - -	Input argument	Un*: Start	/O number of		the I/O number i	:String		
S2: Variable that stores control data :Array of ANY16 [0111] ENO: Execution result :Bit d1: Dummy :ANY16 d2: Variable that turns ON upon completion of the instruction :Array of bit [01] d2[1] also turns ON at the time of error completion. :Array of bit [01] d2[1] also turns ON at the time of error completion. :Array of bit [01] id1: Different device R, ZR Bit Word Uilloit Zn Constant id1: Different device R, ZR Jiii Word Constant id1: Different device R, ZR Jiii Word Constant Chee id1: 1 Bit Word - - - - id2: - 0 - - - - - id2: - 0 - - - - - - id1: - 0 - - - - - - - - - - - - - - <td></td> <td>s1: Rece 1: Ch</td> <td>ption channel i annel 1 (CH1 s</td> <td>side)</td> <td></td> <td>:ANY16</td> <td></td> <td></td>		s1: Rece 1: Ch	ption channel i annel 1 (CH1 s	side)		:ANY16		
d1: Dummy :ANY16 d2: Variable that turns ON upon completion of the instruction Array of bit [01] d2[1] also turns ON at the time of error completion. Setting data *1 HIT R, ZR HIT Word III Compared Constant K, H Other s1 - C - C - C - C - C - C - C - C - C -		s2: Varia	ole that stores					
d2: Variable that turns ON upon completion of the instruction :Array of bit [01] d2[1] also turns ON at the time of error completion. Setting data *1 Hitemal device R, ZR JUNC UNG Zn Constant K, H Other s] - O - O - O - O - O - O - O - O - O -	Output argument							
data 1 Bit Word R, ZR Bit Word Uiiii\Giiii Zn K, H Other (s1) - - - - (- - (- - (-		d2: Varia	ole that turns C					
Image: Constraint of the second se				R, ZR		U∭\G∭ Zn		Others
(d) - (-) - - -		(s1)	-	0		_	0	-
		(s2)	-	0		-	-	-
		d1	-	0		_	-	-
		d2	0	0		-	-	-

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction changes the setting values for sending/receiving data using communication protocols.

ZP_CSET

5

EDICATED

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
€2[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s2 [2]	Request type	Specify the request. 1: Change of unit (word/byte) and buffer memory assignment	1	User
₅2[3]	Word/byte unit specification	Specify the unit of the number of send/receive data. 0: Current setting value 1: In units of words 2: In units of bits	0,1,2	User
∞2[4]	Buffer memory start address for on- demand function	Specify the start address of the buffer memory used by the on-demand function 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1AFFн, 2600н to 3FFFн	User
፼[5]	Buffer memory size for on-demand function	Specify the size (the number of words) of the buffer memory to be used by the on-demand function. 0н: Current setting value is used. 1н to 1A00н: Size	0н, 1н to 1А00н	User
s2 [6]	Send area start address	Specify the start address of the send area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1АFFн, 2600н to 3FFFн	User
€2[7]	Send area size	Specify the size (the number of words) of the send area used by the nonprocedural/bidirectional protocol. 0H: Current setting value is used. 1H to 1A00H: Size * The start area of the send area (1 word) is used for the number of send data specification area.	0н, 1н to 1А00н	User
₅2 [8]	Receive area start address	Specify the start address of the receive area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1АFFн, 2600н to 3FFFн	User
@[9]	Receive area size	Specify the size (the number of words) of the receive area used for the nonprocedural/bidirectional protocol. Он: Current setting value is used. 1н to 1A00н: Size * The start area of the receive area (1 word) is used for the number of receive data storage area.	0н, 1н to 1А00н	User
© [10] to © [111]	For system	_	_	System

Program Example

The following program changes the send buffer area of the CH1 side interface.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

- Sets send buffer to C00H to FFFH.
- Sets receive buffer to 600H to 7FFH.

[Structured ladder/FBD]

1	Var_Flag_Inst	
	EN ENO s dVar_ControlData[0]	Clears D0 to D111
		to 0
		Sets execution
	EN ENO 	type
	. .	-71
		Sets request type
	EN ENO s d Var_ControlData[2]	eete requeet type
		Sets word/byte
	EN EN Var_ControlData[3] ·	unit to word
	. .	
	EN EN	Sets on-demand
	H400 s d Var_ControlData[4]	start address
		Sets on-demand
	EN ENO	buffer size
		On the second line of the second
	MOVP NOVP EN EN	Sets send buffer start address
	H0C00 EN EN EN Var_ControlData[6] .	Start audress
	MOVP	Sets send buffer
	EN EN Var_ControlData[7]	size
	MOVP	Sets receive buffer
	EN ENO - · · · · · · · · · · · ·	start address
	· · · · · · · · · · · · · · · · · · · · · · · · ·	
		Sets receive buffer
	EN ENO s dVar_ControlData[9] ·	size
	ZP_CSET	Performs
	EN ENO - · · · · · · · · ·	initialization
	· · · · · · · · · · · · · · · · · · ·	
	Var_ControlData s2	
2		Turns normal
	Var_Result[0] Var_Result[1] SET I I I I I I I I Var_Rag_Nomal I I	completion flag ON
	dVar_Flag_Nomal	
	· · · · Var Result 11 · · · · · · RST · · · · · · · · · · · · · · · · · · ·	Turns error
	EN ENO d	completion flag ON

MOVP(TRUE, 0, Var_ControlDat MOVP(TRUE, 1, Var_ControlDat MOVP(TRUE, 1, Var_ControlDat MOVP(TRUE, H400, Var_ControlDat MOVP(TRUE, 0, Var_ControlDat MOVP(TRUE, H0C00, Var_ControlD MOVP(TRUE, H400, Var_ControlD MOVP(TRUE, H600, Var_ControlD MOVP(TRUE, H200, Var_ControlD	ta[2]);(* Sets request type *)ta[3]);(* Sets word/byte unit to word *)ta[4]);(* Sets on-demand start address *)ta[5]);(* Sets on-demand buffer size *)Data[6]);(* Sets send buffer start address *)ta[7]);(* Sets send buffer size *)Data[8]);(* Sets receive buffer start address *)
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Norm ELSE SET(TRUE, Var_Flag_Error END_IF; END_IF;	(* Error completion *)

5.3.11 CSET instruction (programmable controller CPU monitor)

ZP_CSET

							Serial
ZP_CSET						Executing condition	: _
Structured I ZP_C EN Un* s1 s2	ENO d1 d2		NO:= ZP_C	ST SET (EN, Un*, s1, s2, c	1, d2);	ZP_CSET	lowing instruction.
Input argument	EN:		ng condition			:Bit	
	Un*:	(00 to FI	-	ne module o digits when expressing	the I/O number	:String r in	
	s1:	1: Chan	on channel r nel 1 (CH1 s	ide)		:ANY16	
	s2:		nel 2 (CH2 s that stores			:Array of ANY16 [0111]	
Output argument	ENO:	Executio	on result			:Bit	
	d1:	Dummy				:ANY16	
	d2:			N upon completion of the time of error com		:Array of bit [01]	
		Setting	Interna	l device R, ZR	J\] U[]\G[] Zn	Constant Others
		data ^{*1}	Bit	Word	Bit	Word	K, H
	_	s1	-	0		_	0 -
	_	s2	-	0		-	
	_	d1	-	0		_	
		d2	0	0		-	

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction registers and cancels the programmable controller CPU monitoring.

5

Control Data

(1)	Registering the	programmable controller	CPU monitoring
-----	-----------------	-------------------------	----------------

Device		Item	Setting data	Setting range	Setting side
s2 [0]	Exe	ecution type	Specify '0'.	0	User
s2 [1]	Completion status		The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
© [2]	Re	quest type	Specify the request. 2: Registration of programmable controller CPU monitoring	2	User
2[3]	Су	cle time unit	Specify the unit of cycle time. 0: 100ms 1: Second 2: Minute	0 to 2	User
s2 [4]	Су	cle time	Specify the cycle time. 1н to FFFFн: Cycle time	1н to FFFFн	User
s2 [5]		ogrammable controller CPU monitoring ction	Specify the monitoring function. 1: Constant cycle transmission 2: Condition agreement transmission	1,2	User
€2 [6]	Programmable controller CPU monitoring transmission method		Specify the transmission method. 0: Data transmission (device data, CPU error information) 1: Notification	0,1	User
€2[7]		User frame output start pointer	Specify the start pointer of the table to which the user frame number for constant cycle transmission is set. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
€2 [8]	Constant cycle transmission	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for constant cycle transmission. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
@[9]	Constant c	Modem connection data No.	Specify the data number for modem function connection when making notification in constant cycle transmission. 0 : No specification (at data transmission and condition agreement transmission) BB8н to BD5н : Connection data number (flash ROM) 8001н to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User
s2 [10]	Nu	mber of registered word blocks	Specify the number of blocks of the word device to be monitored.	0 to 10	User
©[11]	Nu	mber of registered bit blocks	Specify the number of blocks of the bit device to be monitored.	0 to 10	User
⊚[12]	mo (pr	ogrammable controller CPU error nitoring ogrammable controller CPU status nitoring)	Specify whether to also execute programmable controller CPU error monitoring. 0: Not monitored 1: Monitored	0,1	User

Device			Item	Setting data	Setting range	Setting side				
s2 [13]		De	vice code	Specify the code of the device to be monitored. 0 : No device monitored Other than 0 : Device code	90н to CCн (Device code)	User				
s₂ [14] s₂ [15]		Мо	nitoring start device	Specify the start number of the monitoring device in this block.	0 or more	User				
		Nu	mber of registered points	Specify the number of registered points (read points) of this block. 0 : No device monitored 1 or more : Number of registered points * For a bit device, specify the number of points in units of words.	0, 1 or more	User				
@[17]		J	ammable oring bollock adreement transmission			Monitoring condition	Specify the monitoring condition of this block. 0 : No specification (at constant cycle transmission) 1 or more : Monitoring condition	0 to 65535	User	
s2 [18]	Dragrammable								Monitoring condition value	Specify the monitoring condition value for this block. 0 or more: Monitoring condition * Specify '0' at constant cycle transmission.
2 [19]	 Programmable controller CPU monitoring setting 1st * 1st block 			User frame output start pointer	Specify the start pointer of the table to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User			
⊚[20]				Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User			
⊚[21]			Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User				
© [22] to ⊚ [102]	Programmable controller CPU monitoring setting 2nd to 10th * 2nd to 10th blo	ock	ı	The same item arrangement as the first programmable controller CPU monitoring setting item.	_	User				

Device			Item	Setting data	Setting range	Setting side								
s2 [103]					1									
<u>@</u> [104]					0									
s2 [105]			Eine date bas		0									
⊚[106]			Fixed value	Specify a fixed value to monitor the CPU status.	1	User								
s2 [107]		n agreement transmissior			5									
© [108]					1									
@[109]	CPU status monitoring setting		transmission	User frame output start pointer	Specify the start pointer of the to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User							
፼[110]	* Error monitoring 11th * 11th block		Condition agreement	Condition agreement	Condition agreement	Condition agreement	Condition agreement	Condition agreement	Condition agreement	Condition agreement	Condition agreement	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100
@[111]			Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User								

(2) Canceling the programmable controller CPU monitoring

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0н'.	0	User
s2 [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s2 [2]	Request type	Specify the request. 3: Cancel of the programmable controller CPU monitoring	3	User
© [3] to © [111]	For system	_	-	System

Program Example

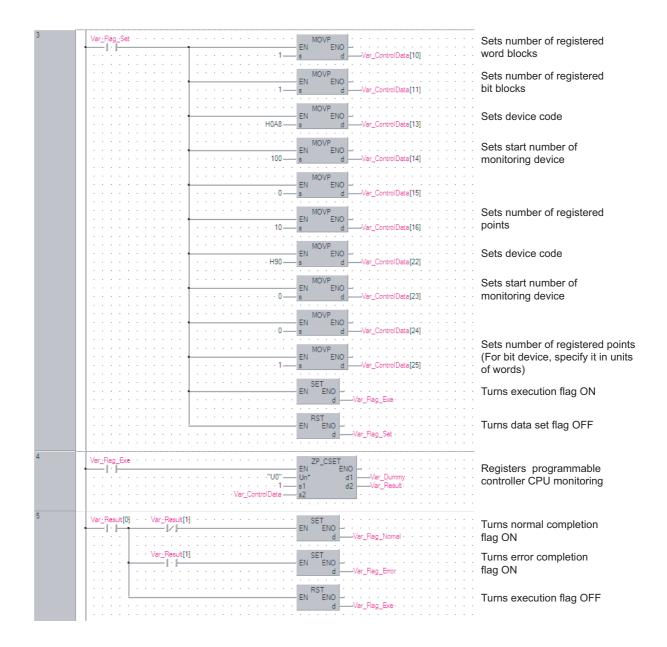
Program to register the programmable controller CPU monitoring
 The following program registers the programmable controller CPU monitoring and sends the
 monitoring result from the CH1 side interface.
 The following setting is to send content of devices from M0 to M15 and devices from D100 to
 D109 to the external device through the constant cycle transmission. (Cycle time: 3 minutes)
 (For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	Instruction pulse
Var_Flag_Inst · Var_Flag_Nomal · · · · · · · · · · · · · · · · · · ·	Sets execution type
2 EN MOVP ss	Sets request type
EN MOVP s d	Sets cycle time unit to minute
EN ENO s d	Sets cycle time to 3 minutes
IS	Sets programmable controller CPU monitoring function to constant cycle transmission
0EN MOVP sVar_ControlDeta[6]	Sets transmission method to data transmission
EN ENO s dVar_ControlData[7]	Sets output start pointer
EN MOVP s d	Sets number of user frame transmissions
EN ENO d	Turns data set flag ON

continued on the next page

MODULE DEDICATED INSTRUCTION



[ST] PLS(X24, Var_Flag_Inst); (* Instruction pulse *) IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=FALSE))THEN MOV(TRUE, 0, Var ControlData[0]); (* Sets execution type *) MOV(TRUE, 2, Var_ControlData[2]); (* Sets request type *) MOV(TRUE, 2, Var_ControlData[3]); (* Sets cycle time unit to minute *) MOV(TRUE, 3, Var ControlData[4]); (* Sets cycle time to 3 minutes *) MOV(TRUE, 1, Var_ControlData[5]); (* Sets programmable controller CPU monitoring function to constant cycle transmission. *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets transmission method to data transmission *) MOV(TRUE, 1, Var ControlData[7]); (* Sets output start pointer *) MOV(TRUE, 2, Var_ControlData[8]); (* Sets number of user frame transmissions *) (* Turns data set flag ON *) SET(TRUE, Var Flag Set); END IF; IF(Var Flag_Set=TRUE)THEN MOV(TRUE, 1, Var_ControlData[10]);(* Sets number of registered word blocks *) MOV(TRUE, 1, Var_ControlData[11]);(* Sets number of registered bit blocks *) (* Sets the 1st block of the CPU monitoring to D100 to D109 *) MOV(TRUE, H0A8, Var ControlData[13]); (* Sets device code *) MOV(TRUE, 100, Var_ControlData[14]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var ControlData[15]); MOV(TRUE, 10, Var_ControlData[16]); (* Sets number of registered points *) (* Sets the 2nd block of the CPU monitoring to M0 to M15 *) (* Sets device code *) MOV(TRUE, H90, Var ControlData[22]); MOV(TRUE, 0, Var_ControlData[23]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var ControlData[24]); MOV(TRUE, 1, Var ControlData[25]); (* Sets number of registered points. (For bit device, specify it in units of words.) *) SET(TRUE, Var Flag Exe); (* Turns execution flag ON *) (* Turns data set flag OFF *) RST(TRUE, Var Flag Set); END_IF; IF(Var Flag Exe=TRUE)THEN ZP CSET(TRUE, "U0", 1, Var ControlData, Var Dummy, Var Result); (* Registers the programmable controller CPU monitoring *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(TRUE, Var Flag Normal); ELSE (* Error completion *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error);

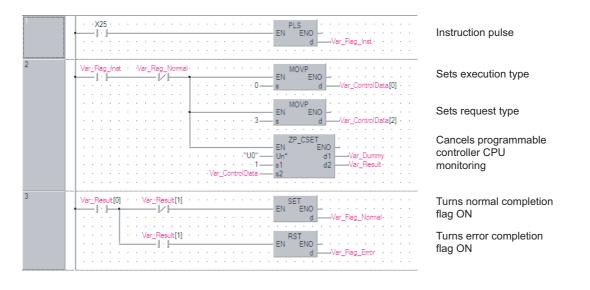
END_IF;

RST(TRUE, Var_Flag_Exe); END_IF; (* Turns execution flag OFF *)

5

(2) Program to cancel the programmable controller CPU monitoring The following program cancels the programmable controller CPU monitoring of the CH1 side interface.

```
(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)
[Structured ladder/FBD]
```



[ST]

PLS(X25, Var_Flag_Inst);

(* Instruction pulse *)

IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=FALSE))THEN MOV(TRUE, 0, Var_ControlData[0]); (* Sets execution type *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets request type *) ZP_CSET(TRUE, "U0", 1, Var_ControlData, Var_Dummy, Var_Result); (* Cancels programmable controller CPU monitoring *)

END_IF;

IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
SET(TRUE, Var_Flag_Normal);	(* Turns normal completion flag ON *)
ELSE	(* Error completion *)
SET(TRUE, Var_Flag_Error);	(* Turns error completion flag ON *)
END_IF;	
END_IF;	

5.3.12 PUTE instruction

G(P)_PUTE						P: Executing cond	dition : 🛧
Structured I EN Un* s1 s2		3D 	ENO:= G_	ST PUTE (EN, Un*, s1, s2	2, d);	indicate instructions. G_PUTE	es any of the following
Input argument	EN: Un*:	Start I/O		he module o digits when expressing	the I/O number in	:Bit :ANY16 n	
	s1:		that stores			:Array of ANY16 [03]	
Output argument	s2: ENO:	Start nu Executio		device that stores read r	egistration data	:ANY16 :Bit	
	d:			N upon completion of th t the time of error compl		:Array of bit [01]	
		Setting data ^{*1}	Interna Bit	Word R, ZR	JIII\III Bit W	/ord	Zn Constant Oth
		(s1)	-	0		-	
		62	-	0		_	
		d	0	0		_	

*1: Local devices and file registers per program cannot be used as setting data.

G_PUTE

5

E DEDICATED

Grant Function

This instruction registers a user frame.

Control Data

Device	Item	Setting data	Setting range	Setting side
s1 [0]	Registration/deletion specification	Specify whether to register/delete the user frame of the number specified by (3) [2]. 1: Registered 3: Deleted	1, 3	User
s1[1]	Registration/deletion result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Frame No.	Specify the user frame number.	1000 to 1199	User
st [3]	Number of registered bytes 1 to 80: Number of bytes of the user frame to be registered. * Specify any number in the range from 1 to 80 as a dummy when '3: Deleted' is selected.		1 to 80	User

Serial

Program Example

The following program registers a user frame as the registration number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

[Structured ladder/FBD]

1		Registration request pulse
2	Var_Flag-Inst MOV	Sets registration request
	EN MOV BNO H3E8 s d Var ControlData[2]	Sets user frame number
		Sets number of registered bytes
	Image: Non-State State St	User frame 0
	■	User frame 1
	A A A A A A A A A A A A A A A A A A A	User frame 2
	· · · · · · · · · · · · · · · · · · ·	User frame 3
	EN ENO 	User frame 4
	EN ENO s d Var_Frame[4]	Sets write enable in
	EN ENO - · · · · · · · · · · · · · · · · · ·	flash ROM side
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Registers user frame
	EN EN EN Var_Result · · · · · · · · · · · · · · · · · · ·	
3	Var_Result[0] · Var_Result[1] · · · · · · · · SET · · · · · · · · · · I · I · I · I · I · I · I · I · · · · ·	Turns normal completion flag ON
	d —Var_Flag_Normal	Turns error completion flag ON

[ST] PLS(X50, Var_Flag_Inst); (* Registration request pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var ControlData[0]); (* Sets registration request *) MOV(TRUE, H3E8, Var ControlData[2]); (* Sets user frame number *) MOV(TRUE, 10, Var_ControlData[3]); (* Sets number of registered bytes *) MOV(TRUE, H3946, Var_Frame[0]); (* User frame 0 *) MOV(TRUE, H3030, Var_Frame[1]); (* User frame 1 *) MOV(TRUE, H3030, Var_Frame[2]); (* User frame 2 *) MOV(TRUE, H4646, Var Frame[3]); (* User frame 3 *) MOV(TRUE, H3030, Var_Frame[4]); (* User frame 4 *) TO(TRUE, 1, H08, H2000, 1); (* Sets write enable in flash ROM side *) G_PUTE(TRUE, H08, Var_ControlData, Var_Frame[0], Var_Result); (* Registers user frame *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF;

END_IF;

DDULE DEDICATED

5.3.13 GETE instruction

G(P)_GETE P: Executing condition : 🕈 indicates any of the following Structured ladder/FBD instructions. ST G_GETE GP_GETE G_GETE ΕN ENO ENO:= G_GETE (EN, Un*, s1, s2, d); Un³ d s1 s2 :Bit Input argument EN: Executing condition :ANY16 Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Variable that stores control data :Array of ANY16 [0..3] Start number the device that stores the read registration data :ANY16 s2: Output argument ENO: :Bit Execution result :Array of bit [0..1] d: Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion. Setting Internal device J....\.... R, ZR U....\G.... Others Zn Constant data *1 Bit Word Word Bit (s1) s2) _ d _ *1: Local devices and file registers per program cannot be used as setting data.

Function

This instruction reads a user frame.

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Control Data

Device	Item	Setting data	Setting range	Setting side
s1[0]	Dummy	-	0	-
st [1]	Read result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Frame No. specification Specify the user frame number.		1000 to 1199	User
s1 [3]	Allowable number of bytes for read data	lowable number of bytes for read data Specify the maximum number of bytes for storing the registered data of the read user frame to @.		User
0[9]	Number of registered bytes	The number of bytes of the registered data for the read user frame is stored.	1 to 80	System

Program Example

The following program reads out the registration data of the user frame number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

[Structured ladder/FBD]

1	×51 · · · · · · · · · · · · · · · · · · ·	Read request pulse
2	VarFlag_Inst MOV I I I	Sets user frame number
	H3E8 s d Var_ControlData[2]	Sets allowable number of bytes for read data
	······ ········ ······· ······· ······· ······ ······ ······ ······· ······· ······· ······· ······· ······· ········ ········· ········ ········ ······· ········· ············ ··········· ··········· ············· ················· ························· ····································	Clears user frame to 0 Reads user frame
	G_GETE EN ENO 	Reads user frame
3	Var_Result[0] Var_Result[1] SET I I I EN ENO I Var_Result[1] I I I I I I I	Turns normal completion flag ON Turns error completion flag ON

[ST] PLS(X51, Var_Flag_Inst); (* Read request pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 0, Var_ControlData[0]); MOV(TRUE, H3E8, Var_ControlData[2]); (* Sets user frame number *) MOV(TRUE, 80, Var_ControlData[3]); (* Sets allowable number of bytes for read data *) FMOV(TRUE, 0, 40, Var_Frame[0]); (* Clears user frame to 0 *) G_GETE(TRUE, H08, Var_ControlData, Var_Frame[0], Var_Result); (* Reads user frame *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF; END_IF;

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ZP_UINI

5.3.14 UINI instruction

Serial **ZP_UINI** Executing condition : indicates the following instruction. Structured ladder/FBD ST ZP_UINI ZP_UINI ΕN ENO ENO:= ZP_UINI (EN, Un*, s, d); Un' d s :Bit Input argument Executing condition EN: Un*: :String Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..9] s: Output argument Execution result :Bit ENO: Variable that turns ON upon completion of the instruction d: :Array of bit [0..1] d[1] also turns ON at the time of error completion. Setting Internal device J....\.... R, ZR Zn Others U....\G.... Constant data^{*1} Bit Word Word Bi s (d) *1: Local devices and file registers per program cannot be used as setting data.

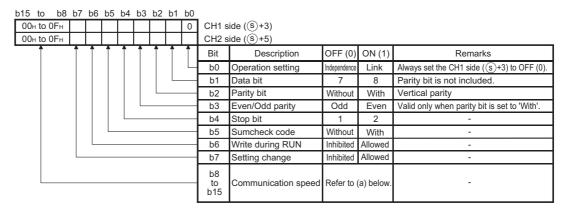


This instruction switches the mode, transmission specification, and host station number of the Q series C24.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	For system	Always specify '0'.	0	User
ঙ[1]	Execution result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ি[2]	Execution type	 Specify the execution type. 0: Switches the execution type according to the setting in the area starting from (§ [3]. 1: Returns the execution type according to the switch setting on GX Works2. 	0, 1	
s [3]	CH1 Transmission specification setting	Set the transmission specifications for CH1. (Refer to (1).)	0 to 0FFEн	
<u></u> জ[4]	CH1 Communication protocol setting	Set the communication protocol for CH1. (Refer to (2).)	0 to 8	User
ঙ [5]	CH2 Transmission specification setting	Set the transmission specifications for CH2. (Refer to (1).)	0 to 0FFFн	User
ঙ [6]	CH2 Communication protocol setting	Set the communication protocol for CH2. (Refer to (2).)	0 to 7	
⑤ [7]	Station No. setting	Set the host station number.	0 to 31	
\$[8] to \$[12]	For system	Always specify '0'.	0	

(1) $\,\,\,(CH1$ Transmission specification setting) and $\,\,(E12$ Transmission specification setting)^{*1}



(a) Communication speed

Communication	Bit position	Communication	Bit position	Remarks
speed	b15 to b8	speed	b15 to b8	I Centarks
50bps	0Fн	14400bps	06н	• 230400bps is selectable only at
300bps	00н	19200bps	07н	, , ,
600bps	01н	28800bps	08н	CH1 side ($($ (\mathbb{S})[3]). (Select 300bps at
1200bps	02н	38400bps	09н	CH2 side (⑤ [5]).)
2400bps	03н	57600bps	0Ан	• The sum of communication speeds
4800bps	04н	115200bps	0Вн	selected at CH1 side and CH2 side must be within 230400bps.
9600bps	05н	230400bps	0Сн	must be within 230400bps.

*1: Specify '0000H' at the CH side for which "MELSOFT connection" is specified in the communication protocol setting.

(2) $\$ (CH1 Communication protocol setting) and $\$ [6] (CH2 Communication protocol setting)

Setting No.	Description		Remarks	
0н	MELSOFT connection		Specify '0000H' for the transmission specification setting.	
1н		Format 1	-	
2н		Format 2	-	
3н	MC protocol	Format 3	-	
4н		Format 4	-	
5н		Format 5	-	
6н	Nonprocedural protocol	·	-	
7н	Bidirectional protocol		-	
8н	For link setting		Setting is possible only for CH1 side ($($ ^(s) [4]))	
9н	Pre-defined protocol		Pre-defined protocol communication	

Precautions

The UINI instruction is applicable to the QJ71C24N (-R2/R4) of which the function version is B and the first five digits of the serial number are '06062' or higher.

Program Example

The following program changes settings of the Q series C24 mounted on the I/O numbers X/Y00 to X/Y1F as follows when X20 turns ON.

		Bit				Setting
Device	Position	Specified value		Description		value
	b0	OFF		Operation setting	Independence	
	b1	ON	-	Data bit	8	
	b2	ON		Parity bit	With	
	b3	OFF	CH1	Even/Odd parity	Odd	
	b4	OFF	Transmission	Stop bit	1	07E6H
s [3]	b5	ON	specification	Sumcheck code	With	072011
	b6	ON	setting	Write during RUN	Allowed	
	b7	ON		Setting change	Allowed	
	b8 to b15	-	-	Communication speed	19200bps	
s [4]		-		unication protocol	Link setting	0008H
	b0	ON		Operation setting	Link	
	b1	ON	-	Data bit	8	
	b2	ON	-	Parity bit	With	
	b3	OFF	CH2	Even/Odd parity	Odd	
	b4	OFF	Transmission	Stop bit	1	07E7H
s [5]	b5	ON	specification	Sumcheck code	With	0/2/11
	b6	ON	setting	Write during RUN	Allowed	
	b7	ON	-	Setting change	Allowed	
	b8 to b15	-		Communication speed	19200bps	
S [6]		-	CH2 Communication protocol setting		MC protocol Format 5	0005H
s[7]		-	Station	No. setting	1	0001H

1	·×20 ···· Y2 ··· Y9 ···×6 ···×0D ······ FMOV I↑ I→ I/ I→	UINI instruction command
	H0 H0 H0 H0 H0 H0 H0 H0 H0 H0	Always sets 0
	H0 H0 s d	Clears control data to 0
	H0 BN BN0 H0 Var_ControlDeta[2]	Sets execution type
	H7E6 s d Var_ControlDeta[3]	Sets CH1 transmission specification
	H8—s d Var_ControlData[4]	Sets CH1 communication protocol
	H7E7 s d Var_ControlData[5]	Sets CH2 transmission specification
	H5s dVar_ControlData[6]	Sets CH2 communication protocol
	H1 EN ENO s d Var_ControlDete[7]	Sets host station number
	ZP_UINI EN ENO Un* d Var_ControlData s	Switches mode
	EN ENO d	Turns interlock signal for*1 communication stop ON
2	Var_Result[0] · · Var_Result[1] · · · Process on normal completion	Normal completion
	Process on error completion	Error completion
	RST EN ENO d	Turns interlock signal for communication stop OFF*1
3	Var_Flag ^{*1} . Data communication process	

[Structured ladder/FBD]

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

```
[ST]
                                                     (* UINI instruction command *)
IF(LDP(TRUE,X20)
&(Y2=FALSE)
                                               (* CH1 mode switching request *)
&(Y9=FALSE)
                                               (* CH2 mode switching request *)
&(X6=FALSE)
                                               (* CH1 mode switching *)
&(X0D=FALSE))THEN
                                               (* CH2 mode switching *)
    (* Runs if there is no mode switching *)
    FMOV(TRUE, H0, 13, Var ControlData[0]); (* Clears control data to 0 *)
    MOV(TRUE, H0, Var_ControlData[0]);
                                               (* Always sets 0 *)
    MOV(TRUE, H0, Var_ControlData[1]);
                                               (* Clears execution result to 0 *)
    MOV(TRUE, H0, Var ControlData[2]);
                                               (* Sets execution type *)
    MOV(TRUE,H7E6,Var_ControlData[3]); (* Sets CH1 transmission specification *)
    MOV(TRUE,H8,Var_ControlData[4]); (* Sets CH1 communication protocol *)
    MOV(TRUE, H7E7, Var_ControlData[5]); (* Sets CH2 transmission specification *)
    MOV(TRUE, H5, Var_ControlData[6]);(* Sets CH2 communication protocol *)
    MOV(TRUE, H1, Var_ControlData[7]);
                                              (* Sets host station number *)
    ZP UINI(TRUE, "00", Var ControlData, Var Result); (* Switches mode *)
    SET(TRUE, Var_Flag); (* Turns interlock signal for communication stop ON *)*1
END_IF;
```

IF(Var_Result[0]=	TRUE)THEN	(* Execution finishe	d *)
IF(Var_Resu	ult[1]=FALSE)THEN	(* Normal completion	on *)
(* Pi	rocess on normal completion *)	
ELSE		(* Error completion	*)
(* Pi	rocess on error completion *)		
END_IF;			
RST(TRUE,	Var_Flag); (* Turns interlock	signal for communication st	op OFF *) ^{*1}

END_IF;

(* Do not perform the data communication process during interlock signal for communication stop ON *)

IF(Var_Flag=FALSE)^{*1} THEN

```
(* Data communication process *)
```

END_IF;

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

5.3.15 CPRTCL instruction

Serial G(P)_CPRTCL P: Executing condition : 1 indicates any of the following instructions. Structured ladder/FBD ST GP_CPRTCL G_CPRTCL G_CPRTCL ENO ΕN _ Un³ d ENO:= G_CPRTCL (EN, Un*, n1, n2, s, d); n1 n2 s Input argument EN: Executing condition :ANY16 Un*: Start I/O number of the module :ANY16 (00 to FE: Higher two digits when expressing the I/O number in three digits) ·ANY16 n1: Channel to communicate with other devices 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) n2: Number of consecutive protocol executions (1 to 8) :ANY16 Start number of the device in which control data are stored :Array of ANY16 [0..17] s: Output argument ENO: :Bit Execution result Variable that turns ON upon completion of the instruction d: :Array of bit [0..1] d[1] also turns ON at the time of error completion.

Setting	Interna	device	R, ZR	J	\	U\G	Zn	Constant	Others
data ^{*1}	ata *1 Bit Word	. , <u>с</u> . ,	Bit	Word	0:;\G:;		K, H	Guidie	
n1	-	C)			-		0	-
n2	-	C)			-		0	-
S	-	C)			-		-	_
d	0	C)			-		-	-

*1: Local devices and file registers per program cannot be used as setting data.

G_CPRTCL

This instruction executes the protocols and functional protocols written to the flash ROM by predefined protocol support function.

Control Data

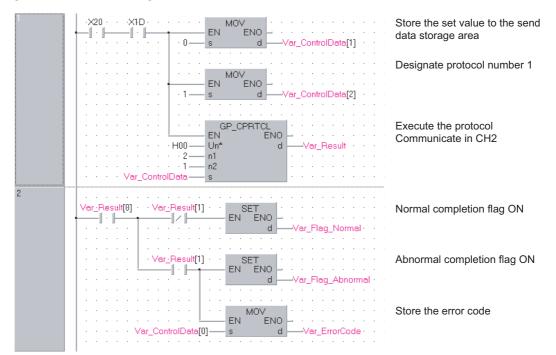
Device	Item	Setting data	Setting range	Setting side
		The instruction completion status is stored. When executing multiple protocols, the execution		
() [0]	Completion status	result of the protocol executed at last is stored.*1	_	System
s [0]		0 : Normal completion		Gystein
		Other than 0 : Error completion (error code) ^{*2}		
		The number of executions is stored.		
⑤ [1]	Number of executions	Protocols with errors are included in the count.	1 to 8	System
01.1		When settings of the setting data and control data		- ,
		contain an error, "0" is stored. Set the first protocol number or functional protocol		
⑤ [2]		number to be executed.		
to	Execution protocol	:	1 to 128,	User
	number designation	Set the 8th protocol number or functional protocol	201 to 207	
s [9]		number to be executed.		
		When the communication type of the first protocol		
		executed is "Receive only" or "Send & receive", the		
		matched receive packet number is stored.		
s [10]		"0" is stored with the following condition.		
		When the communication type is "Send only"		
		• If the error occurs to the first protocol executed		
		When the functional protocol is executed		
to	Verification match	:		
	receive packet number	When the communication type of the 8th protocol	0, 1 to 16	System
		executed is "Receive only" or "Send & receive", the		
		matched receive packet number is stored.		
		"0" is stored with the following condition.		
S [17]		When the communication type is "Send only"		
		If the error occurs to the 8th protocol executed		
		• When the number of the executed protocols is		
		less than 8		
		When the functional protocol is executed		

*1: When executing multiple protocols, if an error occurs to the nth protocol, the protocols after the nth protocol are not executed.

*2 : For details of the error code at the error completion, refer to Q Corresponding Serial Communication Module User's Manual (Basic) or MELSEC-L Serial Communication Module User's Manual (Basic).

Program Example

This instruction executes the protocol specified in Var_ControlData[2] when X20 turns ON. [Structured ladder/FBD]



[ST]

IF((X20=TRUE) & (X1D=TRUE))THEN

MOV(TRUE, 0, Var_ControlData[1];

(* Store the set value to the send data storage area *) MOV(TRUE, 1, Var_ControlData[2];(* Designate protocol number 1 *) GP_CPRTCL(TRUE, H00, 2, 1, Var_ControlData, Var_Result);

(* Execute the protocol Communicate in CH2 *)

END_IF;

IF(Var_Result[0]=TRUE)THEN

IF(Var_Result[1]=FALSE)THEN

SET(TRUE, Var_Flag_Normal);(* Normal completion flag ON *)

ELSE

SET(TRUE, Var_Flag_Abnormal);(* Abnormal completion flag ON *) MOV(TRUE, Var_ControlData[0], Var_ErrorCode);

(* Store the error code *)

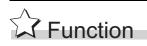
END_IF; END_IF;

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5.4 Network Dedicated Instruction

5.4.1 RIRD instruction

				J_F	RIRD, G_RIR
				cc	-Link CC IE C CC IE F
J(P)_RIRD G(P)_RIRD				P: Executing cor	idition :
Structur I RIRD EN ENO Jn* d1 s d2	red ladder/FBD			instructions. J_RIRD G_RIRD	es any of the following JP_RIRD GP_RIRD
Input argument	Jn*: Ne		ost station (1 to 239, 254) n "Valid module during other stati	:Bit :ANY16 ion	
	ac	ccess"			
	Un*: Sta (00		nodule its when expressing the I/O numb	ANY16: Der in	
Output argument	Un*: Sta (00 s: Va ENO: Ex d1: Sta d2: Va	0 to FE: Higher two dig ree digits) ariable that stores cont kecution result art number of the devi- ariable that turns ON u	its when expressing the I/O numb	coer in :Array of ANY16 [04] :Bit :ANY16	
Output argument	Un*: Sta (00 thr s: Va ENO: Ex d1: Sta d2: Va d2: Va d2	0 to FE: Higher two dig ree digits) ariable that stores cont kecution result art number of the devi- ariable that turns ON u 2[1] also turns ON at th Internal dev	its when expressing the I/O numb rol data ce that stores read data con completion of the instruction e time of error completion.	ber in :Array of ANY16 [04] :Bit :ANY16 :Array of bit [01]	Zn Constant Othe
Output argument	Un*: Sta (00 thr s: Va ENO: Ex d1: Sta d2: Va d2: Va d2: dat	0 to FE: Higher two dig ree digits) ariable that stores cont kecution result art number of the devi- ariable that turns ON u 2[1] also turns ON at th Internal dev	its when expressing the I/O numb rol data ce that stores read data con completion of the instruction e time of error completion.	Coer in :Array of ANY16 [04] :Bit :ANY16 :Array of bit [01]	Zn Constant Othe



This instruction reads data for the specified number of points from the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station.

J_RIRD, G_RIRD

E Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code) For error codes when target station is anything other than master/local module, refer to the manual of the target station.	_	System
ি [1]	Target station No.	Specify the station number of the target station.	0 to 64 ^{*1} 0 to 120	
s [2]	Access code, Attribute code	Specify the access code and attribute code of the device to be read. b15 b8b7 b0 Access code Attribute code	Refer to (1) and (2).	User
ঙ [3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	Within the device range* ²	
<u>জ</u> [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 32 ^{*3} 1 to 480 ^{*4}	

*1 : For G(P)_RIRD, the setting range shall be 0 to 64.

- *2: For details, refer to the manual for the local station or the intelligent device station from which data are read.
- When the random access buffer is specified, specify the start address of the random access buffer as 0. *3 : The value indicates the maximum number of data to be read.
- Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the receive buffer area setting range set by a parameter.
- *4 : When reading device data from the programmable controller CPU other than the QCPU (Q mode), QCPU (A mode) or QnACPU/AnUCPU, the setting range shall be 1 to 32 words.

(1) Buffer memory of the CC-Link module

Buffer memory		Access code	Attribute code
Buffer in an intelligent device station		00н	
	Random access buffer	20н	
	Remote input	21н	
Buffer in a master or local station	Remote output	22н	04н
	Remote register	24н	
	Link special relay	63н	
	Link special register	64н	1

Davias*1	Name	Devi	ce type	Unit	*2	Attribute code ^{*2}
Device ^{*1}	Name	Bit	Word	Onit	Access code*2	
Input relay	Х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	
Internal relay	М	0	-	Decimal	03н	
Latch relay	L	0	-	Decimal	83н	
Link relay	В	0	-	Hexadecimal	23н	
Timer (contact)	Т	0	-	Decimal	09н	
Timer (coil)	Т	0	-	Decimal	0Ан	
Timer (current value)	Т	-	0	Decimal	0Сн	
Retentive timer (contact)	ST	0	-	Decimal	89н	
Retentive timer (coil)	ST	0	-	Decimal	8Ан	
Retentive timer (current value)	ST	-	0	Decimal	8Сн	05н
Counter (contact)	С	0	-	Decimal	11н	
Counter (coil)	С	0	-	Decimal	12н	
Counter (current value)	С	-	0	Decimal	14н	
Data register ^{*3}	D	-	0	Decimal	04н	
Link register ^{*3}	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	
Link special relay	SB	0	-	Hexadecimal	63н	1
Link special register	SW	-	0	Hexadecimal	64н	1
Special relay	SM	0	-	Decimal	43н	1
Special register	SD	-	0	Decimal	44н	1

(2) Device memory of the programmable controller CPU module

*1 : Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

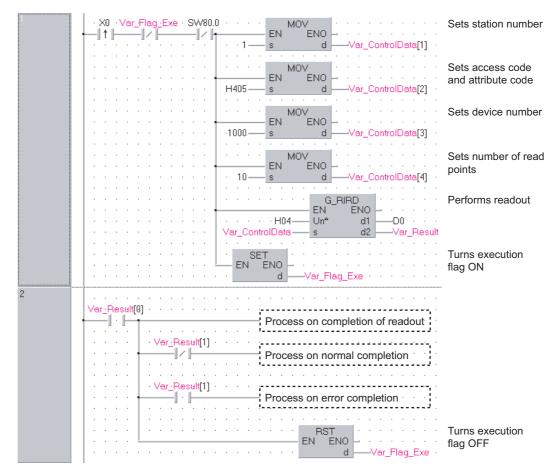
*2: For access code/attribute code when target station is anything other than master/local module, refer to the manual of the target station.

*3 : D65536 and the following devices of extended data registers as well as W10000 and the following devices of extended link registers cannot be specified.

Program Example

The following program reads out 10-word data, which start from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F, and stores the data in the devices starting from D0 when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]

[ST] IF(X0=TRUE) &(Var_Flag_Exe=FALSE) &(SW80.0=FALSE))THEN MOV(TRUE,1, Var_ControlData[1]); MOV(TRUE,H0405, Var_ControlData[2]); MOV(TRUE, 1000, Var_ControlData[3]); MOV(TRUE, 10, Var_ControlData[3]); G_RIRD(TRUE, H04, Var_ControlData, D0, SET(TRUE, Var_Flag_Exe); END_IF;	(* Sets device number *) (* Sets number of read points *) Var_Result);(* Performs readout *)
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)

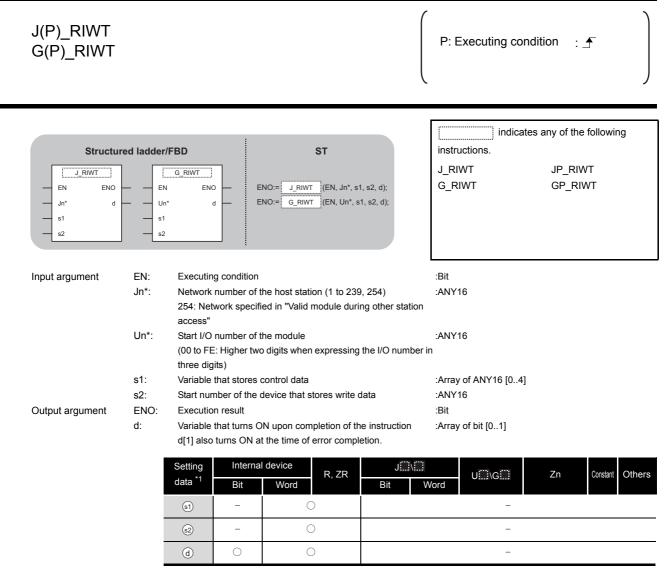
END_IF;

MODULE DEDICATED INSTRUCTION

5.4.2 RIWT instruction

J_RIWT, G_RIWT

CC-Link CC IE C CC IE F



*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction writes the data for the specified number of points to the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station.

Control Data

Device	Item	Setting data	Setting range	Setting side
ৱ) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code) For error codes when target station is anything other than master/local module, refer to the manual of the target station.	-	System
s1[1]	Target station No.	Specify the station number of the target station	0 to 64 ^{*1} 0 to 120	
ৱ)[2]	Access code and attribute code	Specify the access code and attribute code of the device to be read.	Refer to (1) and (2).	User
s1[3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	Within the device range*2	
st [4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 10 ^{*3} 1 to 480 ^{*4}	

- *1 : For G(P)_RIWT, the setting range shall be 0 to 64.
- *2: For details, refer to the manual for the local station or the intelligent device station to which data are written.
- When the random access buffer is specified, specify the start address of the random access buffer as 0.*3 :When writing device data to the programmable controller CPU other than the QCPU (Q mode), QCPU (A
- mode) or QnACPU/AnUCPU, the setting range shall be 1 to 10 words.*4 : The value indicates the maximum number of data to be written.
- The value indicates the maximum number of data to be written.
 Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the send buffer area setting range set by a parameter.

(1) Buffer memory of the CC-Link module

Buffer memory category		Access code	Attribute code
Buffer memory		00н	
Buffer in a master or local station	Random access buffer	20н	
	Remote input	21н	04н
	Remote output	22н	
	Remote register	24н	
	Link special relay	63н]
	Link special register	64н]

Device ^{*1}	Name	Devi	ice type	Unit	*2	Attribute code ^{*2}
Device '	Name	Bit	Word	Onin	Access code ^{*2}	
Input relay	Х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	
Internal relay	М	0	-	Decimal	03н	
Latch relay	L	0	-	Decimal	83н	
Link relay	В	0	-	Hexadecimal	23н	
Timer (contact)	Т	0	-	Decimal	09н	
Timer (coil)	Т	0	-	Decimal	0Ан	
Timer (current value)	Т	-	0	Decimal	0Сн	
Retentive timer (contact)	ST	0	-	Decimal	89н	
Retentive timer (coil)	ST	0	-	Decimal	8Ан	-
Retentive timer (current value)	ST	-	0	Decimal	8Сн	05н
Counter (contact)	С	0	-	Decimal	11н	
Counter (coil)	С	0	-	Decimal	12н	
Counter (current value)	С	-	0	Decimal	14н	
Data register ^{*3}	D	-	0	Decimal	04н	-
Link register ^{*3}	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	
Link special relay	SB	0	-	Hexadecimal	63н	
Link special register	SW	-	0	Hexadecimal	64н	
Special relay	SM	0	-	Decimal	43н	
Special register	SD	-	0	Decimal	44н	

(2) Device memory of the programmable controller CPU module

*1 : Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

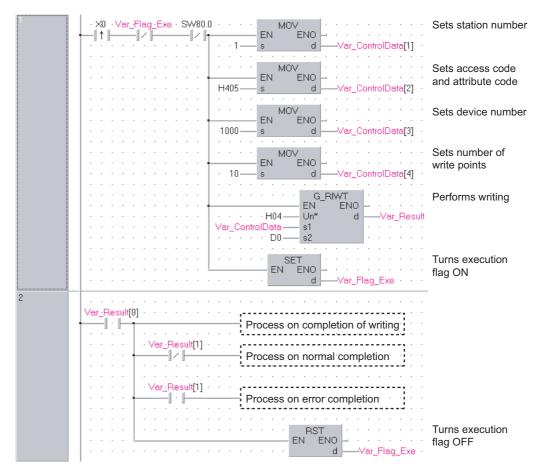
*2: For access code/attribute code when target station is anything other than master/local module, refer to the manual of the target station.

*3 : D65536 and the following devices of extended data registers as well as W10000 and the following devices of extended link registers cannot be specified.

Program Example

The following program stores 10-word data, which are stored in the devices starting from D0, to the devices starting from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]

[ST]	
IF(X0=TRUE)	
&(Var_Flag_Exe=FALSE)	(* Execution flag *)
&(SW80.0=FALSE))THEN	(* Data link status of station number 1 *)
MOV(TRUE, 1, Var_ControlData[1]);	(* Sets station number *)
MOV(TRUE, H0405, Var_ControlData[2]);	. ,
MOV(TRUE, 1000, Var_ControlData[3]);	
MOV(TRUE, 10, Var_ControlData[4]);	,
G_RIWT(TRUE, H04, Var_ControlData, D0	_ , ,
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of writing *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
PST/TPLIE Var Elag Exe): (* Turns execution f	

RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) END_IF;

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G_RIRCV

CC-Link

5

G_RIRCV

EDICATED

5.4.3 RIRCV instruction

				1	
G(P)_RIRC\	/			P: Executing condit	ion : 🛧
Structured I		D	ST	indicates a instructions. G_RIRCV	any of the following GP_RIRCV
- EN - Un* - s1 - s2	ENO d1 d2	ENO:=[G_RIRCV (EN, Un*, s1, s2, d1, d2)	;	
Input argument	EN:	Executing con	dition	:Bit	
	Un*:		er of the module ner two digits when expressing the I/	ANY16: O number in	
	s1:		tores control data	:Array of ANY16 [04]	
	s2:		tores interlock signal	:Array of ANY16 [02]	
• • • •	ENO:	Execution resu		:Bit :ANY16	
Output argument	d1·	Start number of	of the device that stores read data		
Output argument	d1: d2:	Variable that to	of the device that stores read data urns ON upon completion of the insi s ON at the time of error completior	truction :Array of bit [01]	
Output argument		Variable that to d2[1] also turn Setting	urns ON upon completion of the inst s ON at the time of error completion nternal device	truction :Array of bit [01] n.	Z.n Constant C
Output argument		Variable that to d2[1] also turn Setting In data *1 E	urns ON upon completion of the inst s ON at the time of error completion nternal device	truction :Array of bit [01] n.	Zn Constant C
Output argument		Variable that to d2[1] also turn Setting data ¹¹ E	arns ON upon completion of the insi s ON at the time of error completion nternal device R, ZR	truction :Array of bit [01] n.	Zn Constant C
Output argument		Variable that to d2[1] also turn Setting data *1 (s1) (s2) (c)	Arms ON upon completion of the inst s ON at the time of error completion nternal device R, ZR Bit Word E	truction :Array of bit [01] n. J::::\::: Bit Word U:::\G::: -	Zn Constant C

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction automatically performs handshaking with an intelligent device station and reads data from the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).

Control Data

Device	Item	Setting data	Setting range	Setting side
st [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
st [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1 [3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 480 ^{*2}	User

*1 : For details, refer to the manual for the intelligent device station from which data are read.

*2 : The value indicates the maximum number of data to be read.

Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

Device	Item	Setting data	Setting range	Setting side
0	b15 to b8 b7 to b0	RY: Request device	0 to 127	User
⊚[0]	0 RY	Set the high-order 8 bits to 0.	0	User
	b15 to b8 b7 to b0	RX: Completion device	0 to 127	User
s2 [1]	RWr *3 RX	RWr: Error code storage device	0 to 15, FFн	User
		Set FFH when no error code storage device exists.	,	
		0: Completes with the content of one device (RXn).		
	b15 to b0	1: Completes with the content of two devices (RXn,		
s2 [2]	Completion mode	RXn + 1). 0/	0/1	User
		(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

(1) Interlock signal storage device

*3 :

The same error code as that for the completion status of control data are stored in the error code storage device.

Program Example

The following program reads 11-word data, which are stored in buffer memory starting from the buffer memory address 400H of the number 63 intelligent device station (AJ65BT-R2(N)) connected to the master module mounted on the I/O numbers X/Y00 to X/Y1F, and stores the data in the devices starting from D40.

The interlock signal storage is set to request device: RY2, completion device: RX2, error code storage device: RWr2, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]

1	Var_Flag_Inst · Var_Flag_Exe · SW83.E · · · · PN MOV	Sets station number
	Image: Second	
	H4 Kenner	Sets access code and attribute code
	H400 s d Var_ControlData[3]	Sets buffer memory address
	MOV EN s 11 s	Sets number of read points
	MOV EN ENO H2 s d	Sets request device
	H202 KOV	Sets completion device and error code storage area
	H1 B S d Var_InterlockData[2]	Sets completion mode
	G_RIRCV EN ENO EN ENO Un* d1 	Performs readout
2	Ver_Flag_Inst SW83.E MEP SET SET I I EN ENO Image: Set in the set in th	Turns execution flag ON
3	Var_Result[0] Var_Result[1] Image: Second state stat	
	RST EN ENO d Var_Flag_Inst	Turns read request OFF
	EN ENO dVar_Flag_Exe	Turns execution flag OFF

[ST] IF((Var_Flag_Inst=TRUE) (* Read request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) &(SW83.E=FALSE))THEN (* Data link status of station number 63 *) (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) (* Sets access code and attribute code *) MOV(TRUE,H4, Var_ControlData[2]); MOV(TRUE, H400, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 11, Var_ControlData[4]); (* Sets number of read points *) (* Sets interlock signal storage device *) MOV(TRUE, H2, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H202, Var_InterlockData[1]); (* Sets completion device and error code storage area *) MOV(TRUE, H1, Var_InterlockData[2]); (* Sets completion mode *) G RIRCV(TRUE, H00, Var ControlData, Var InterlockData, D40, Var Result); (* Performs readout *) END_IF; IF(MEP((Var_Flag_Inst=TRUE) & (SW83.E=FALSE)))THEN (* Read request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) (* Normal completion *) IF(Var Result[1]=FALSE)THEN -----(* Process on normal completion *) (* Error completion *) ELSE -----(* Process on error completion *) END_IF; RST(TRUE, Var Flag Inst); (* Turns read request OFF *) RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) END_IF;

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G_RISEND

CC-Link

5.4.4 RISEND instruction

G(P)_RISEN	ID			P: Executing cond	lition : _
Structured la G_RISI EN Un* s1 s2	END	ST ENO:= <u>G_RISEND</u> (EF	N, Un*, s1, s2, d1, d2);	instructions. G_RISEND	s any of the following GP_RISEND
Input argument Output argument	Un*: Start I (00 to three s1: Variat s2: Variat ENO: Exect d1: Start n d2: Variat	digits) ole that stores control of ble that stores interlock ution result number of the device the ole that turns ON upon	vhen expressing the I/O nun lata signal	:Array of ANY16 [04] :Array of ANY16 [02] :Bit :ANY16	
	Setting data *1 ©		R, ZR	Word UIII\GIII	Zn Constant Othe
	(d1)	-	0	-	

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction automatically performs handshaking with an intelligent device station and writes data to the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).

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G_RISEND

EDICATED

Control Data

Device	Item	Setting data	Setting range	Setting side
st) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
st [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1 [3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 480 ^{*2}	User

*1 : For details, refer to the manual for the intelligent device station to which data are written.

*2 : The value indicates the maximum number of data to be written.

Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

Device	Item	Setting data	Setting range	Setting side
\sim m	b15 to b8 b7 to b0	RY: Request device	0 to 127	User
₅2 [0]	0 RY	Set the high-order 8 bits to 0.	0	User
	b15 to b8 b7 to b0	RX: Completion device	0 to 127	User
s2 [1]	RWr *3 RX	RWr: Error code storage device	0 to 15,	User
		Set FFH when no error code storage device exists.	FFн	USEI
		0: Completes with the content of one device (RXn).		
	b15 to b0	1: Completes with the content of two devices (RXn,		
s2 [2]	Completion mode	RXn + 1).	0/1	User
		(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

(1) Interlock signal storage device

*3 : The same error code as that for the completion status of control data are stored in the error code storage device.

The following program writes 1-word data of D10 to the buffer memory address 111H of the number 63 intelligent device station (AJ65BT-R2(N)) which is connected to the master module mounted on the I/O numbers from X/Y00 to X/Y1F.

The interlock signal storage settings are set to request device: RY4, completion device: RX4, error code storage device: RWr1, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]

1	Var_Flag:Inst · Var_Flag:Exe · SW83.E · · · · MOV · · · · · · · · · · · · · · · · · · ·	Sets station number
	63 <u>s</u> d <u>Var_ControlData[1]</u>	
	MOV EN ENO H4— s d	Sets access code and attribute code
		Sets buffer memory address
	H111 s d Var_ControlData[3]	Sets number of write
	· · · · · · · · · · · · · · · · · · ·	points Sets request device
	•••••• <	
	MOV MOV EN EN H104 s d	Sets completion device and error code storage area device
		Sets completion mode
	H1 — s d —Var_InterlockData[2]	Sets data to be written
		to intelligent device station
	EN EN ENO ENO · · · · · · · · · · · · · · · · · · ·	Performs writing
	Var_InterlockData s2	
2	Ver_Flag_Inst · SW83.E · MEP · · · · SET · · · · · · · · · · · · · · · · · · ·	Turns execution flag ON
3	Var_Result[0] · Var_Result[1] · Process on normal completion · Process on normal completion · · · · · · · · · · · · · · · · · · ·	
	Process on error completion	
	EN ENO	Turns write request OFF
		Turns execution flag OFF

[ST] IF((Var_Flag_Inst=TRUE) (* Write request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) (* Data link status of station number 63 *) &(SW83.E=FALSE))THEN (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) MOV(TRUE, H4, Var_ControlData[2]); (* Sets access code and attribute code *) MOV(TRUE, H111, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 1, Var_ControlData[4]); (* Sets number of write points *) (* Sets interlock signal storage device *) MOV(TRUE, H4, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H104, Var_InterlockData[1]); (* Sets completion device and error code storage area device *) MOV(TRUE, H1, Var_InterlockData[2]); (* Sets completion mode *) (* Sets data to be written to intelligent device station *) MOV(TRUE, 11, D10); GP_RISEND(TRUE, H00, Var_ControlData, Var_InterlockData, D10, Var_Result); (* Performs writing *) END IF; IF(MEP((Var Flag Inst=TRUE) & (SW83.E=FALSE)))THEN (* Write request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) (* Normal completion *) IF(Var_Result[1]=FALSE)THEN Process on normal completion *) ELSE (* Error completion *) Process on error completion *) END IF; (* Turns write request OFF *) RST(TRUE, Var_Flag_Inst); RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *)

END_IF;

G_RIFR

5.4.5 RIFR instruction

Structured ladder/FBD ST Impute argument ENC: G.RFR (EN, Un*, n1, n2, n3, d); Input argument EN: Executing condition EN: Start I/O number of the module ANY16 Mandom access buffer specification (FFh) 11: Intelligent device station number (1 to 64) ANY16 Mandom access buffer specification (FFh) 12: Offset value of specification (FFh) 13: Mumber of the master station 14: Intelligent device station number (1 to 64) ANY16 Mandom access buffer of the master station 13: Offset value of specification (FFh) ANY16 14: Intelligent device station ANY16 More processing is performed with setting '0'. ANY16 More processing is performed with setting '0'. ANY16 More processing is performed with setting '0'. Bit Cutput argument ENC: Execution result Bit Cutput argument ENC: Execution result Bit Cotput argument ENC: Execution result Bit Cottput argument ENC: Execution result Bit Cottput argument ENC: Execution result Bit Cottput argument Enterplet device that stores read data							cc-	Link
Structured ladder//FBD ST Instructions. G_RIFR G_RIFR ENO:= G_RIFR ENO:= G_RIFR ENO:= G_RIFR Input argument EN: EXecuting condition :Bit Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) n1: Intelligent device station number (1 to 64) ANY16 Random access buffer specification (FFn) n2: Offset value of specified intelligent device auto-refresh buffer ANY16 Number of read points (0 to 4096) :ANY16 No processing is performed with setting '0'. Output argument ENO: Execution result :Bit d: Start number of the device that stores read data :ANY16 Mark :Start number of the device that stores read data :ANY16 : Start number of the device that stores read data : :Start number of the device that stores read data : :Start number of the device that stores read data : :Start number of the device that stores read data	G(P)_RIFR					P: Executing con	ndition : f	
Un*: Start I/O number of the module :ANY16 (00 to FE: Higher two digits when expressing the I/O number in three digits) :ANY16 n1: Intelligent device station number (1 to 64) :ANY16 Random access buffer specification (FFH) :ANY16 n2: Offset value of specified intelligent device auto-refresh buffer :ANY16 or random access buffer of the master station :ANY16 Number of read points (0 to 4096) :ANY16 No processing is performed with setting '0'. :ANY16 Output argument ENO: Execution result :Bit d: Start number of the device that stores read data :ANY16 Setting Internal device R, ZR Jiii Uiii Giii Zn Constant K, H Other n1	EN Un* n1 n2	FR ENO	ENO:= <u>G_</u> F		n3, d);	instructions.		ng
n1: Intelligent device station number (1 to 64) :ANY16 Random access buffer specification (FFH) n2: Offset value of specified intelligent device auto-refresh buffer :ANY16 or random access buffer of the master station n3: Number of read points (0 to 4096) :ANY16 No processing is performed with setting '0'. Output argument ENO: Execution result :Bit d: Start number of the device that stores read data :ANY16 Setting Internal device R, ZR III Word IIII COM Zn K, H Oth n1 0 0 - n2 0 0 -	Input argument	Un*: S ((tart I/O number of t 00 to FE: Higher two		the I/O number in	:ANY16		
n2: Offset value of specified intelligent device auto-refresh buffer :ANY16 or random access buffer of the master station n3: Number of read points (0 to 4096) :ANY16 No processing is performed with setting '0'. Output argument ENO: Execution result :Bit d: Start number of the device that stores read data :ANY16 Setting Internal device R, ZR JUNC UNG Zn Constant K, H Oth n1 0 0 - n2 0 0 -				tion number (1 to 64)		:ANY16		
Setting data 1 Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device that stores read data Internal device of the device of the device that stores read data Internal device of the devi		n2: C	Offset value of speci	fied intelligent device au		:ANY16		
Output argument ENO: Execution result :Bit d: Start number of the device that stores read data :ANY16 Setting data *1 Internal device R, ZR J:::\::: U:::\G::: Zn Constant K, H Oth n1 0 - 0 - 0 - n2 0 - 0 - 0 -						:ANY16		
d: Start number of the device that stores read data :ANY16 Setting data*1 Internal device R, ZR J:::\::: J:::\::: Zn Constant K, H Oth K, H n1 O - O - O - n2 O O - O - O -	Output orgument			formed with setting '0'.		·Dit		
Setting data*1 Internal device R, ZR JIII III DIII III Zn Constant K, H Oth n1 O O - O - O - O - O - - O - <td>Output argument</td> <td></td> <td></td> <td>levice that stores read o</td> <td>lata</td> <td></td> <td></td> <td></td>	Output argument			levice that stores read o	lata			
n3 0 0 - 0 -		da	nta *1 Bit	Word R, ZR		/ord 	^{Zn} К, Н	Other –
			n3 O	0		_	0	-

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*1: Local devices and file registers per program cannot be used as setting data.

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Grant Function

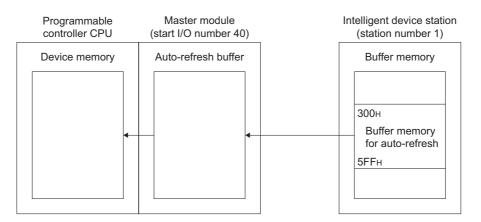
d

This instruction reads data from the auto-refresh buffer of the specified station.

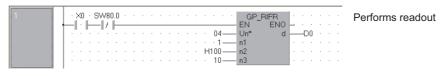
The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

The following program reads out 10-word data from buffer memory starting from the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) and stores the data in the devices starting from D0 when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]



[ST]

IF((X0=TRUE) & (SW80.0=FALSE))THEN

GP_RIFR(TRUE, H04, 1, H100, 10, D0); END_IF; (* Performs readout *)

5.4.6 RITO instruction

				(
G(P)_RITO					P: Executing co	ondition : _	F
Structured la					indic	ates any of the f	ollowing
EN Un* 1 1 1 1 1 1 1 1 1 1 1 1 1			ST RITO (EN, Un*, n1, n2, n	3, d);	G_RITO	GP_RITO	0
Input argument	EN: Un*:	Executing condition Start I/O number of (00 to FE: Higher to three digits)		the I/O number ir	:Bit :ANY16 1		
	n1:	Intelligent device s	tation number (1 to 64) Iffer specification (FFн)		:ANY16		
	n2:		cified intelligent device au buffer of the master statio		:ANY16		
	n3:	Number of write po	vints		:ANY16		
Output argument	ENO: d:	Execution result Start number of the	e device that stores write o	data	:Bit :ANY16		
		Setting Intern	al device	J\			Constant

n2 \bigcirc 0 0 _ _ n3 0 \bigcirc _ _ 0 d _ _ _ _ *1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction writes the data to the auto-refresh buffer of the specified station.

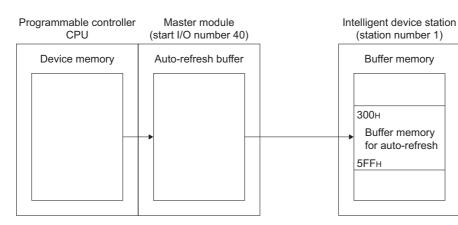
The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

G_RITO

5

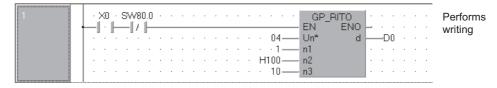
G_RITO

The following program write 10-word data which are stored in the devices starting from D0 into buffer memory starting the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) when X0 turns ON.



(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]





IF((X0=TRUE) & (SW80.0=FALSE))THEN GP_RITO(TRUE, H04, 1, H100, 10, D0); END_IF;

(* Performs writing *)

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G_RLPASET

5.4.7 RLPASET instruction

G(P)_RLPAS	SET				P: Executing condition :
					indicates any of the following instructions.
					G_RLPASET GP_RLPASET
Structured I G_RLP EN Un* s1 s2 s3 s4 s5	ASET BENO	-	NO:= <mark>G_RLP</mark>	ST ASET (EN, Un*, s1, s2, s3, s4, s5, d);	
Input argument	EN:	Executir	ng condition		:Bit
	Un*: s1: s2: s3: s4: s5:	(00 to Fi three dig Variable Variable Variable Variable Variable	gits) e that stores e that stores e that stores e that stores e that stores e that stores	o digits when expressing the I/O	:Array of ANY16 [07] :Array of ANY16 [063] ta :Array of ANY16 [03] : Array of ANY16 [03]
Output argument	ENO:	-	nent data on result		:Bit
	d:	Variable	that turns C	ON upon completion of the instru- t the time of error completion.	
		Setting data ^{*1}	Interna Bit	I device R, ZR Word Bit	J∰\∭ U∭\G∰ Zn Constant
	ī	<u>(s1)</u>	-	0	_
		s2	-	0	_
		<u> </u>			
	-	63	-	0	-
	-		-	0	-

Grant Function

This instruction sets the network parameters to the master station and starts up the data link.

NULE DEDICATED

G_RLPASET

Control Data

Device	Item	Setting data	Setting range*2	Setting side
st [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঞ্জ [1]	Setting flag	Specify the validity of each setting data from @ to @ . 0: Invalid ^{*1} 1: Valid b15 b14 b13 b4 b3 b2 b1 b0 Creation setting data(s2) Creation specification data(s3) Error invalid station specification data(s4) Send/receive and auto-refresh buffer Mode assignment data(s5) 00: Remote net (Ver. 1 mode) 01: Remote net (Ver. 2 mode) 11: Cannot be used	_	User
s1 [2]	Number of connected modules	Set the number of connected slave stations.	1 to 64	User
st [3]	Number of retries	Set the number of retries to be performed to a communication error station.	1 to 7	User
s1 [4]	Number of automatic return modules	Set the number of slave stations that can be returned in one link scan.	1 to 10	User
গ্ৰ [5]	Operation specification when CPU is down	Specify the data link status when a master station programmable controller CPU error occurs. 0: Stop 1: Continue	0, 1	User
st [6]	Scan mode specification	Specify the link scan mode for sequence scan. 0: Asynchronous 1: Synchronous	0, 1	User
s1 [7]	Delay time specification	Set '0' for the delay time.	0	User

*1: For the setting data for which invalid is specified, default parameter is applied.

*2: Setting a value outside the setting range results in error completion of the instruction.

	Slave stati	on setting data			
Device	Item	Settir	ng data	Setting range	Setting side
		Set the slave station type, the num	ber of occupied slave stations,	and	
		the station number as shown below	V.		
		Default parameter setting is '0101+ number of occupied slave stations: compatible remote I/O station)'	Station number Number of occupied slave station Type of slave station H to 0140H (station number: 1 to		
		Setting of station number		1 to 40н	
		1 to 64 (BIN setting)	1 10 401		
		Setting of the number of occupied Number of occupied slave	_		
		stations	Setting		
s2 [0]		1 station	1н	1 to 4н	
to	Setting for 1 to 64	2 stations	—	User	
	modules ^{*3}	3 stations	—		
© [63]		4 stations	—		
		Setting of slave station type ^{*4}		-	
		Type of slave st	ation Setting	I	
		Ver.1 compatible remote I/O station	on OH		
		Ver.1 compatible remote device s	tation 1H	_	
		Ver.1 compatible intelligent device	e station 2H		
		Ver.2 compatible single remote de	evice station 5H		
		Ver.2 compatible single intelligent	device station 6H	0 to Fн	
		Ver.2 compatible double remote of	levice station 8H	_	
		Ver.2 compatible double intelliger	t device station 9H		
		Ver.2 compatible quadruple remo		_	
		Ver.2 compatible quadruple intelli	gent device station CH	_	
		Ver.2 compatible octuple remote		_	
		Ver.2 compatible octuple intelligen	nt device station FH	_	

(1) Slave station setting data

*3: Set the same number which was set for Number of connected modules in the control data.

*4 : Setting a value outside the setting range in the setting of slave station type results in error completion of the instruction.

(2) Reserved station specification data

Device	Item		Setting data								Setting range	Setting side	
		Specify the r 0: Not sp 1: Specifi	ecifie		ition. *	6							
s3 [0]	Charification for 1 to 64		b15	b14	b13	b12	to	b3	b2	b1	b0		
to	Specification for 1 to 64	(s3)[0]	16	15	14	13	to	4	3	2	1	_	User
	stations ^{*5}	s3[1]	32	31	30	29	to	20	19	18	17		
s3 [3]		s3[2]	48	47	46	45	to	36	35	34	33		
		s3[3]	64	63	62	61	to	52	51	50	49		
				. 1	l to 64	in the	table ir	ndicate	es a sta	ation n	umber.		
		Default para	meter	settin	ig is 'C	: Not	specif	ied' fo	or all s	tations	S.		

*5 : Set the parameter up to the largest station number set in the slave station setting data.

*6: Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

(3) Error invalid station specification data

Device	Item		Setting data								Setting range	Setting side	
⊛ [0] to ⊛ [3]	Specification for 1 to 64 stations ^{*7}	Specify the 6 0: Not sp 1: Specifi (\$4][0] (\$4][1] (\$4][2] (\$4][3]	ecifie	b14 15 31 47 63	b13 14 30 46 62	b12 13 29 45 61 in the	to to to to to table in	b3 4 20 36 52 ndicate	b2 3 19 35 51 es a sta	b1 2 18 34 50	b0 1 17 33 49 umber.	_	User
		Default para	meter	r settir	ng is '(): Not	speci	fied' fo	or all s	tation	s.		

*7: Set the parameter up to the largest station number set in the slave station setting data.

*8 : Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

Reserved station specification has a priority when an error invalid station and reserved station are specified for the same station.

(4) Send/receive and auto-refresh buffer assignment data

Device	Item	Setting dat	ta	Setting range	Setting side
65 [0] to 66 [77]	Specification for 1 to 26 modules ^{*9}	Specify the buffer memory size assigned transmission for local stations and in (\$5)[0] Send buffer size (\$5)[1] Receive buffer size (\$5)[2] Auto-refresh buffer size (\$5)[75] Send buffer size	gnment at transient	Send/receive buffer ^{*10} : Он (no setting) 40н to 1000н 0 (word) (no setting) 64 to 4096 (words) Auto-refresh buffer ^{*11} : Он (no setting) 80н to 1000н 0 (word) (no setting)	Setting side
		Default parameter setting is 'send bu buffer size: 40H, auto-refresh buffer		128 to 4096 (words)	

*9: Set the assignment data, in ascending order, for the stations set for a local station or intelligent device station in the slave station setting data.

*10 : Keep the total of the send/receive buffer size within 1000H (4096 (words)). Specify the size added seven words to the size of send/receive data as the send/receive buffer size. Setting a value outside the setting range results in error completion of the instruction.

*11: Keep the total of the auto-refresh buffer size within 1000н (4096 (words)).
 Specify the necessary auto-refresh buffer size for each intelligent device station.
 Setting a value outside the setting range results in error completion of the instruction.

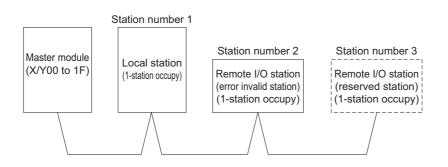


The RLPASET instruction is applicable to the QJ61BT11 of which the function version is B and the first five digits of the serial number are '03042' or higher.

The QJ61BT11N and LJ61BT11 is compatible with the RLPASET instruction.

Program Example

The following program sets the network parameter to the master module mounted on the I/O number X/Y00 to X/Y1F, and starts up the data link.



[Structured ladder/FBD]

1	SM400 ·····	Reads SB0040 to SB01FF
	EN FROM EN	Reads SW0040 to SW01FF
	· · · · · · · · · · · · · · · · · · ·	
2	SM402 SB6E SET Image:	Parameter setting command
	d —Var_Flag_Inst	
3	Var_Flag:Inst	Clears completion status
	· · · · · · · · · · · · · · · · · · ·	
		Sets all of setting flags to Valid
	15 s d Var_ControlData[1]	Sets number of connected modules
	EN EN EN US	
		Sets number of retries
	EN ENO s d	
		Sets number of automatic return modules
	s	
	EN ENO s d Var ControlData[5]	Sets operation specification when CPU is down to stop
		Sets scan mode specification to
	EN ENO s d Var_ControlData[6]	asynchronous
		Set delay time specification
	0 s d -Var_ControlData[7]	
4	Ver_Flag_Inst · · · · · · · · · · · · · · · MOV · · · · · · · · · · · ·	First module: local station,
	H2101 EN ENOVar_SlaveStation[0]	1-station occupy, station number 1
		Second module: Remote I/O station, 1-station occupy, station number 2
	H102 s d Var_SlaveStation[1] ·	
	EN ENO H103 s d Var SlaveStation[2]	Third module: Remote I/O station, 1-station occupy, station number 3
	· · · · · · · · · · · · · · · · · · ·	
5	Var_Flag_Inst MOV EN EN S d	Reserved station specification: station number 3
6		Error invalid station specification: station number 2
	H2	
7		First module: local station, send buffer 100 words
	100 s d Var_BufferSize[0]	
	EN ENO 100 s d Var BufferSize[1]	Receive buffer 100 words
	MOV	Auto-refresh buffer 0 word
	EN ENO	
8	Ver-Flag-Inst	Derforme perometer acting and
0	Var_Flag_Inst GP_RLPASET EN EN	Performs parameter setting and data link start
	Var_ControlData s1	
	Var_ReservedStation—s3 ·····var_ErrorInvalidStation—s4 ·····s4	
	Var_BufferSize s5	
9	Var_Result[0] · · · · · · · · · · · · · · · · · · ·	Turns parameter setting command OFF
	d —Var_Flag_Inst	
	Ver_Result[1] SET Image: New Year (New Year) EN Image: New Year (New Year) Image: New Year) Image: New Year) <t< th=""><th>Refresh command</th></t<>	Refresh command
	• •	Control program start command
	· · · · · · · · · · · · · · · · · ·	
	Ver_Result[1] Process on error completion	

5.4 Network Dedicated Instruction 5.4.7 RLPASET instruction

[ST] FROM(TRUE, H0, H5E4, 28, K4SB40); (* Reads SB0040 to SB01FF *) FROM(TRUE, H0, H640, 448, SW40); (* Reads SW0040 to SW01FF*) IF((SM402=TRUE) & (SB6E=TRUE))THEN (* Parameter setting command *) SET(TRUE, Var Flag Inst); END IF: IF(Var_Flag_Inst=TRUE)THEN (* Parameter setting command ON *) MOV(TRUE, 0, Var ControlData[0]); (* Clear completion status *) MOV(TRUE, 15, Var_ControlData[1]); (* Sets all of setting flags to Valid *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets number of connected modules *) MOV(TRUE, 3, Var ControlData[3]); (* Sets number of retries *) MOV(TRUE, 1, Var ControlData[4]); (* Sets number of automatic return modules *) MOV(TRUE, 0, Var_ControlData[5]); (* Sets operation specification when CPU is down to stop *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets scan mode specification to asynchronous *) MOV(TRUE, 0, Var ControlData[7]); (* Set delay time specification *) MOV(TRUE, H2101, Var_SlaveStation[0]); (* First module: local station, 1-station occupy, station number 1 *) MOV(TRUE, H0102, Var SlaveStation[1]); (* Second module: Remote I/O station, 1-station occupy, station number 2*) MOV(TRUE, H0103, Var SlaveStation[2]); (* Third module: Remote I/O station, 1-station occupy, station number 3 *) MOV(TRUE, H4, Var_ReservedStation[0]); (* Reserved station specification: station number 3 *) MOV(TRUE, H2, Var ErrorInvalidStation[0]); (* Error invalid station specification: station number 2 *) MOV(TRUE, 100, Var BufferSize[0]); (* First module: local module, send buffer 100 words *) MOV(TRUE, 100, Var BufferSize[1]); (* Second module: local station, receive buffer 100 words *) MOV(TRUE, 0, Var_BufferSize[2]); (* Third module: local station, auto-refresh buffer 0 words *) GP_RLPASET(TRUE, H00, Var_ControlData, Var_SlaveStation, Var ReservedStation, Var ErrorInvalidStation, Var BufferSize, Var Result); (* Performs parameter setting *) END IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, SB3); (* Refresh command *) SET(TRUE, Var Flag Exe); (* Control program start command *) ELSE (* Error completion *) (* Process on error completion *) END_IF; RST(TRUE, Var Flag Inst); (* Turns parameter setting command OFF *) END IF;

5

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5.4.8 READ instruction

J_READ, G_READ

CC IE C CC IE F NET/H Ether

J(P)_READ P: Executing condition • 🔺 G(P) READ indicates any of the following Structured ladder/FBD ST instructions. J_READ JP_READ J_READ G_READ G_READ GP_READ ENO ΕN ΕN ENO ENO:= J READ (EN, Jn*, s1, s2, d1, d2); d1 Un* d1 Jn ENO:= G_READ (EN, Un*, s1, s2, d1, d2); s1 d2 s1 d2 s2 sź Input argument EN: Executing condition ·Bit Jn*: Network number of the host station (1 to 239, 254) :ANY16 254: Network specified in "Valid module during other station access" ·ANY16 Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..17] s1: Start number of the target station's device from which data are :ANY s2: read Output argument ENO: :Bit Execution result Start number of the host station's device that stores read data :ANY16 d1: d2. Variable that turns ON upon completion of the instruction :Array of bit [0..1] d2[1] also turns ON at the time of error completion. Setting Internal device . R, ZR U....\G.... Zn Others Constant data Bit Word Word Bi (s1) _ _ ○^{*2} (s2) (d1) _ _ d2) _ *1: Local devices and file registers per program cannot be used as setting data. *2 : Only CC-Link IE Field Network When the target station is LCPU, Universal model QCPU, or Basic model QCPU, the digit specification of the bit device can be used (example: K4M16). The digit specification of the bit device can be used when the following conditions are met. The device number is a multiple of 16 (10_H).

• The digit specification is 4 points (K4).

Grant Function

This instruction reads data from a word device of another station.

Control Data

Device	Item	Setting data				Setting range	Setting side	
(ব) [0]	Error completion type	Spec 0: Cl st 1: Cl	or completion cify the clock lock data at tarting from	the time of error comp	etion is not se	t in the area	0001н, 0081н	User
s1 [1]	Completion status	0 Othe	: er than 0	npletion status is stored. Normal completion Error completion (erro			_	System
ৱা[2]	Channel used by host station	Ether MELS CC-L	De: met SECNET/H	I used by the host station scription oller Network Network	Setting 1 to 8 1 to 10 1 to 2	value	1 to 10	User
্রা [3]	Target station's CPU type		y the type of ing value 0000н 03FFн ^{*1} 0000н 03E0н ^{*2} 03E1н ^{*2} 03E2н ^{*2} 03E3н ^{*2} 03FFн ^{*1}	Target station CPU/hos data are the same as 'C Target station CPU/hos data are the same as 'C Target station CPU/hos data are the same as 'C Multi-CPU No. 1/target system) Multi-CPU No. 2 Multi-CPU No. 3 Multi-CPU No. 4 Target station CPU/hos	ription t system CPU I3FFH'.) t system CPU t system CPU I3FFH'.) station CPU (s	(Specified	0000н, 03FFн 0000н, 03E0н to 03E3н, 03FFн	User
s1 [4]	Target station network No.		239 : Netw	number of the target sta vork number sify this when 254 has b			1 to 239, 254	User
্রা [5]	Target station No.	Specify the station number of the target station. Setting value Description MELSECNET/H 1 to 64 Ethernet - CC-Link IE Controller Network - Host station is Universal model QCPU 1 to 120 Host station is anything other than 1 to 64 Universal model QCPU 1 to 64 CC-Link IE Field Network - Master station 125 (7DH) Local station or the intelligent device 1 to 120		1 to 125	User			
st [6]	-	Reserv	ed				0	User

MODULE DEDICATED INSTRUCTION

J_READ, G_READ

Device	Item		Setting data		Setting range	Setting side	
		① For instruction exec					
		Specify the number of	0 to 15	User			
st [7]	Number of resends	completed within the					
011		② At instruction comp	letion				
		The number of reser			-	System	
			Specify the monitoring time required for the instruction completion.				
		If the instruction is not					
		number of times specifi	ied in 🗊 [7].				
		De	escription	Setting value			
			0 to TCP retransmission				
			timer value: Monitoring is				
s1 [8]	Arrival monitoring time		performed by the TCP retransmission timer value		0 to 32767	User	
01.1	-	Ethernet	(TCP retransmission time)	0 to 16383			
			value + 1) to 16383:				
			Monitoring time (unit:				
			second)			1	
		MELSECNET/H	0: 10 seconds				
		CC-Link IE	1 to 32767: 1 to 32767	0 to 32767			
			seconds				
		Specify the number of r	read data.				
		Description Setting value		Setting value		l	
s1 [9]	Read data length	Ethernet 1 to 960		1 to 8192	User		
@[a]		MELSECNET/H (word)					
		CC-Link IE Controller Network 1 to 8192 (word)					
st [10]	_	Reserved	_	User			
			a data in the area starting f				
s1[11]	Clock set flag ^{*3}	0: Invalid	ne data in the area starting fr		-	System	
9[11]	Clock Set hag	1: Valid					
			of error completion are store	ed in BCD format.			
		b15 to		b0			
st [12]	Clock data at the time of	(s1) [12] Month (01)					
to	error completion ^{*3}	s1 [13] Ноиг (00н	, ,	,	-	System	
st][15]		(s1) [14] Second (00 (s1) [15] Year (00H to 99H					
				ю 06н (Sat.)			
		Network number of the	station where an error was	detected is stored			
	Error-detected network No.		or was detected at the host			_	
st [16]	*3	number is not stored.)		,	-	System	
		1 to 239: Network num					
		Number of the station v	where an error was detected	l is stored.			
		•	or was detected at the host	station, the network			
		number is not stored.)	number is not stored.)				
		Setti	ng value	Description			
		MELSECNET/H		1 to 64			
s1[17]	Error-detected station No. *3	Ethernet		1 to 120	-	System	
		CC-Link IE Controller	Network				
		CC-Link IE Field Netw					
		Master station		125 (7Dн)			
		station or th	Local station or the intelligent device 1 to 120				

- *1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.
 - (Specification is not possible for other modules. An access is always made to the target station CPU.)
- *2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

- Network module: The first five digits of the serial number are '06092' or higher.
- QCPU: The first five digits of the serial number are '06092' or higher.
- *3: Data are stored only when 1 is set in bit 7 of Error completion type ((a) [0]).

The following program reads out data from the devices from D250 to D254 in the station number 4 (target station) and stores the data to the devices from D700 to D704 of the station number 1 (host station).

1	Max Electrication and a second	-
	·Var_Flag_Inst ···· MOV ······························	Sets error completion type
	· · · · · · · · · · · · · · · · · · ·	completion type
	· · · · · · · · · · · · · · · · · ·	Coto obonnol upod
		Sets channel used by host station
	Sector State Stat	
	MOV	Sets target station's
		CPU type
	H0	
	MOV	Sets target station
	EN ENO - · · · · · · · · · · · ·	network number
	Var_ControlData[4]	
	ΜΟΥ	Sets target station
		number
	· · · · · · · · · · · · · · · · · · · · · · · · · · · · ·	
	ΜΟΥ · · · · · · · · · · · · · · · · · · ·	
	EN ENO	
	MOV	Sets monitoring
	EN ENO	time
	MOV	Sets data length
	EN ENO	by the word
	 .	
	■ · · · · · · · · · · · · · · · · · · ·	
	s d Var ControlData[10]	
2		
-		Sets number of resends
	s d Var_ControlData[7]	resenus
		Deuteurse vereileurt
		Performs readout
	· · · · · · · · · · · · · · · · · · ·	
	····································	
3	Ver-Decult01	
	Var_Result[0] Process on completion of readout	Execution finished
	Var_Result[1] Process on normal completion	Normal completion
	_ · · · · _ · · · · · · · · · · · · · ·	Normal completion
	Var_Result[1]	
	Process on error completion	Error completion
	· · · · · · · · · · · · · · · · · ·	
		Stores error code
	·····Var_ControlData[1] s dVar_ErrorCode····	

[Structured ladder/FBD]

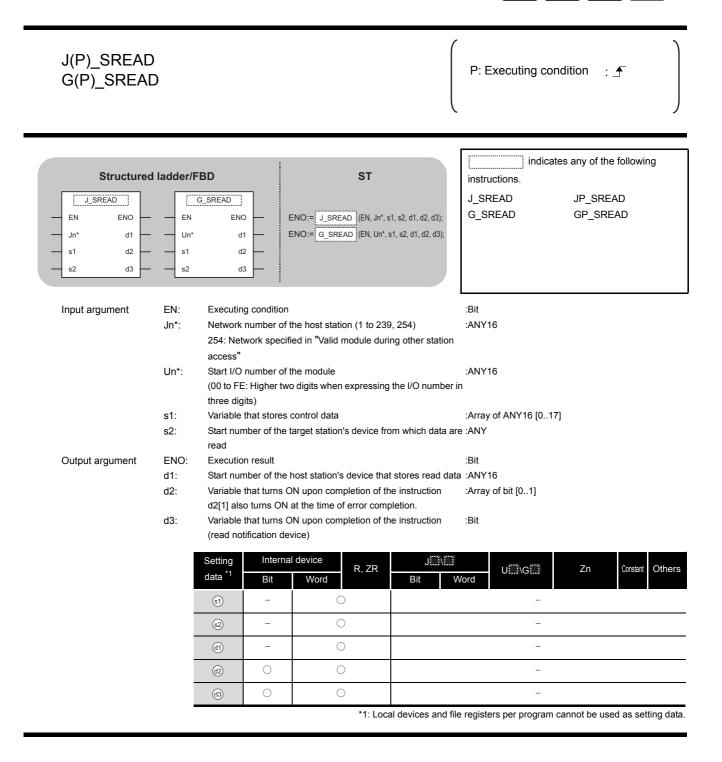
[ST]	
IF (LDP(TRUE,Var_Flag_Inst) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets error completion type *)
MOV(TRUE,1,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,4,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,0,Var_ControlData[6]);	
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,5,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]);	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE)	
MOV(TRUE, 5, Var_ControlData[7]);	
_ · _),D700,Var_Result);(* Performs readout *)
END_IF;	(* Execution finished *)
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of reado	ut *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *	s)
'	
ELSE	(* Error completion *)
(* Process on error completion *)	
MOV(TRUE, Var ControlData[1], V	ar_ErrorCode);(* Stores error code *)
END_IF;	//(/

END_IF;

5.4.9 SREAD instruction

J_SREAD, G_SREAD

CC IE C CC IE F NET/H Ether



Grant Function

This instruction reads data from a word device of another station.

Control Data

For the control data of the SREAD instruction that reads the word device memory of another station, refer to READ instruction.

The control data of the SREAD instruction are the same as those of the READ instruction. Accordingly, this section omits the explanation.

The following program example of the SREAD instruction is different from that of the READ instruction by assigning the read notification device $_{(3)}$ at the end of arguments.

Var_Flag_Inst Sets error MOV ΕN ENO completion type H81 ar_ControlData[0] d Sets channel used MOV ENO ΕN by host station ar_ControlData[2] · 1 d Sets target MOV ΕN ENO station's CPU type HO ControlData[3] d Sets target station MOV ΕN ENO network number • 1 ar_ControlData[4] Sets target station MOV ENO ΕN number 4 d ar_ControlData[5] MO\ ΕN ENO 0 ar_ControlData[6] d Sets monitoring MON ΕN ENO time 0 ar_ControlData[8] d s Sets data length MOV ΕN ENO by the word 5 d ar_ControlData[9] MOV ΕN ENO 0 /ar ControlData[10] d Var Flag Exe SB47 SW0A0.2 Sets number of MOV ΕN ENO resends 121 5 ControlData[7] s d J_SREAD Performs readout ΕN ENO Jn* d1 -D700 1 Var_ControlD s1 d2 -Var_Result D250 s2 d3 Var Flag З Var_Result[0] Process on completion of readout Execution finished ·ŀ Var_Result[1] Normal completion Process on normal completion 171 /ar_Result[1] Process on error completion Error completion ŀ -----Stores error code MO\ ΕN ENO Var_ControlData[1] d -Var_ErrorCode s

[Structured ladder/FBD]

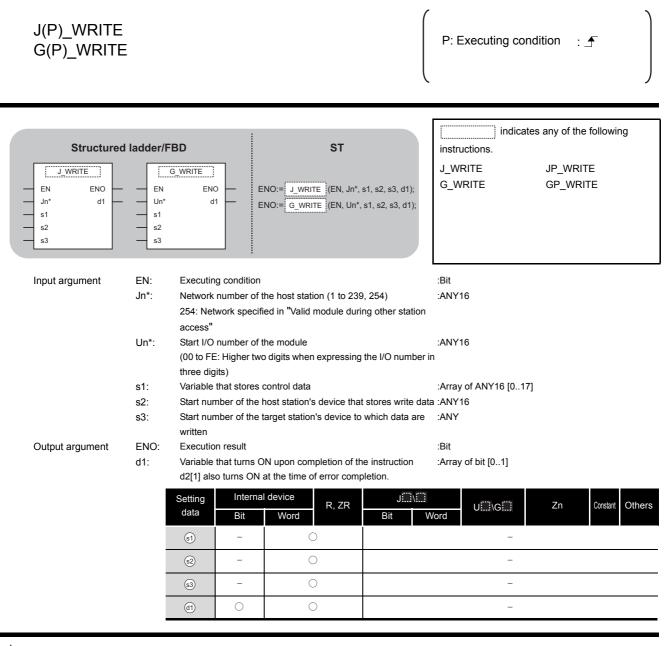
[ST]	
IF (Var_Flag_Inst=TRUE) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets error completion type *)
MOV(TRUE,1,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,4,Var_ControlData[5]);	(* Sets target station number*)
MOV(TRUE,0,Var_ControlData[6]);	
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,5,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]);	
END_IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) /	
MOV(TRUE, 5, Var_ControlData[7]); J_SREAD(TRUE,1,Var_ControlData,D250,I	
J_SREAD(TROE, I, val_ControlData, D250, i	(* Performs readout *)
END IF;	
	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
	(* Error completion *)
. (* Droccoc on orror completion *)	
(* Process on error completion *)	j
MOV(TRUE, Var_ControlData[1], Var	_ErrorCode);(* Stores error code *)
END_IF;	

END_IF;

5.4.10 WRITE instruction

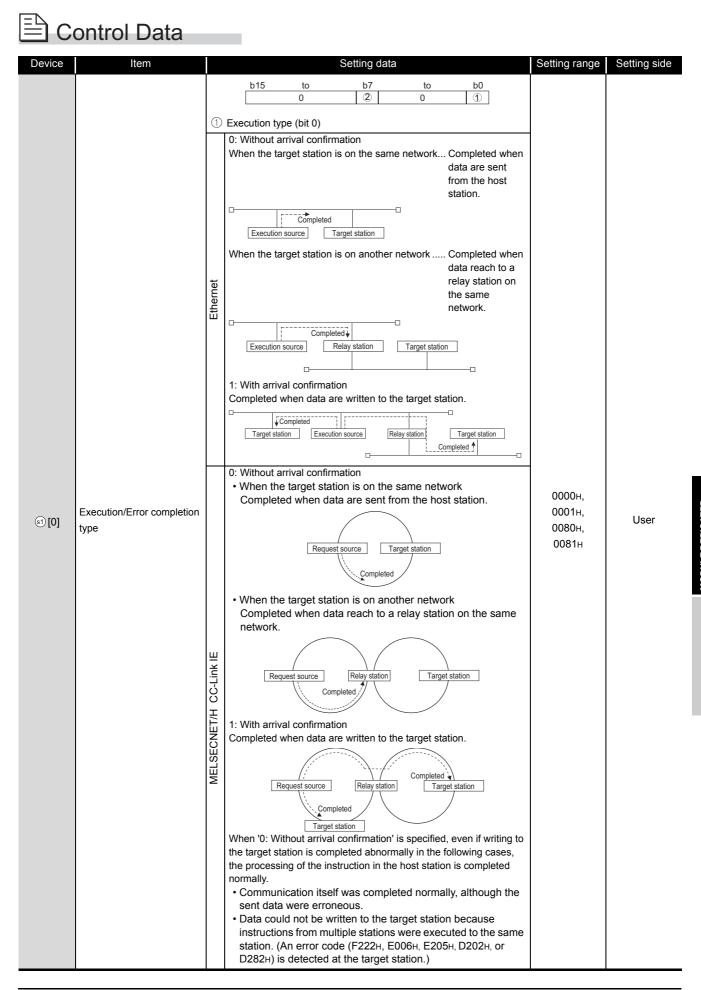
J_WRITE, G_WRITE

CC IE C CC IE F NET/H Ether



☆ Function

This instruction writes data to a word device of another station.



J_WRITE, G_WRITE

Device	Item			Setting data		Setting range	Setting side
্রা [0]	Execution/Error completion type	Specify 0: Clock startir 1: Clock	 ② Error completion type (bit 7) Specify the clock data setup status at the time of error completion. O: Clock data at the time of error completion is not set in the area starting from (a) [11]. 1: Clock data at the time of error completion is set in the area starting from (a) [11]. 				User
st][1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)				-	System
		Specify	the channel	used by the host station.			
			D	escription	Setting value		
st)[2]	Channel used by host station	Ethernet MELSECNET/H CC-Link IE Controller Network		1	1 to 8	1 to 10	User
					1 to 10		
		CC	CC-Link IE Field Network 1 to 2		-		
		Specify the type of the target station CPU. Setting value Description					
		Ethernet	0000н	Target station CPU/host data are the same as '03	03664		
		Ethe	03FFн ^{*1}	Target station CPU/host	system CPU		User
			0000н	Target station CPU/host data are the same as '03			
st [3]	Target station's CPU type	E E	03E0H ^{*2}	Multi-CPU No. 1/target s system)	tation CPU (single CPU	0000н,	
		CNE ink I	03E1н ^{*2}	Multi-CPU No. 2		03E0н to	
		MELSECNET/H CC-Link IE	03E2н ^{*2}			03E3н, 03FFн	
		Σ	03E3н ^{*2}				
			03FFн ^{*1}	Target station CPU/host system CPU			
ട്1[4]	Target station network No.	Specify the network number of the target station. 1 to 239 : Network number 254 : Specify this when 254 has been set in Jn.			1 to 239, 254	User	

Device	Item	Setting data	Setting range	Setting side		
		Specify the station number of the target station.				
		(1) Station number specification				
		Setting value Descri	otion			
		MELSECNET/H 1 to 64				
		Ethernet				
		CC-Link IE Controller Network 1 to 120				
		CC-Link IE Field Network -				
		Master station 125 (7D+)			
		Local station or the intelligent device 1 to 120 station 1				
		To increase the data reliability when the station number is s executing the instruction with setting Execution/Error compl (((()))) to '1: With arrival confirmation' is recommended. (2) Group specification (target station is anything other than	etion type			
		CC-Link IE Field Network)	1 to 120,	User		
s 1 [5]	Target station No.	81н to A0н: All stations in group numbers 1 to 32 (Setting is available when Execution type is set to '0: W	125 (7Dн)			
୍ରାରୀ						
		arrival confirmation' in (s1 [0].)	FFн			
		Group No.1 · · · 81н Group No.2 · · · 82н				
		to				
		Group No.32 · · · A0H				
		(3) All stations specification				
		FFH: All stations of the target network number (Except	the host			
		station.)	lithout			
		(Setting is available when Execution type is set to '0: W	hulout			
		arrival confirmation' in 🔄 [0].) To specify a group or all stations.				
		 Specify '0000H' or '03FFH' for the target station's CPU typ Group specification cannot be set for the station of the CO Field Network. It cannot be confirmed if the data are written to the target 	C-Link IE station			
		normally. Confirm the device of the target station of the w destination.				
s1 [6]	-	(Fixed value)	0	User		
		1 For instruction execution				
		Specify the number of instruction resends when the instruct	ion is not			
		completed within the monitoring time specified in $\fbox{[8]}$ (Se	etting is 0 to 15			
(7 1	Number of resends	available when Execution type is set to '1: With arrival confi	rmation' in			
s1[7]		(s1) [0].)				
		② At instruction completion				
		The number of resends (result) is stored. (Setting is availab	le when –	– System		
		Execution type is set to '1: With arrival confirmation' in <a>[0]	1.)			

J_WRITE, G_WRITE

Device	Item		Setting data		Setting range	Setting side
		Specify the monitoring time required for instruction completion. (Setting is available when Execution type is set to '1: With arrival confirmation' in (s) [0].) If the instruction is not completed within this time, it is resent by the number of times specified in (s) [7].				
		Description Setting value				
্রা [8]	Arrival monitoring time	Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)		0 to 32767	User
		MELSECNET/H CC-Link IE	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767		
		Specify the number of	write data.			
			escription	Setting value		
st [9]	Write data length	Ethernet MELSECNET/H CC-Link IE Field Network		1 to 960 (word)	1 to 8192	User
		CC-Link IE	CC-Link IE Controller Network 1 to 8192 (word)			
s1 [10]	(Reserved)		-	-		
st][11]	Clock set flag ^{*3}	Valid/invalid status of t 0: Invalid 1: Valid	he data in the area starting fr	-	System	
ৱা [12] to ৱা [15]	Clock data at the time of error completion ^{*3}	Clock data at the time b15 tc (s) [12] Month (01) (s) [13] Hour (00- (s) [14] Second (00) (s) [15] Year (00+ to 99+	н to 12н) Year (00н to 99н) La н to 23н) Day (01н to Он to 59н) Minute (00н	_	System	
ৱা [16]	Error-detected network No.		e station where an error was or was detected at the host : ber	_	System	
		Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.)				
		Setting value Description MELSECNET/H 1 to 64		Description 1 to 64		
s][17]	Error-detected station No. *3	Ethernet CC-Link IE Controller			-	System
		Master station		125 (7Dн)		
		Local station or the station	ne intelligent device	1 to 120		

*1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

*2: Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.) • Network module: The first five digits of the serial number are '06092' or higher.

• QCPU: The first five digits of the serial number are '06092' or higher.

*3 : Data are stored only when 1 is set in bit 7 of Error completion type ((s) [0]).

The following program writes data which are stored in the devices from D750 to D753 of the station number 2 (host station) to the devices from D300 to D303 of the station number 3 (target station).

·Var_Flag-Inst EN MOV I↑ EN ENO ······ ······ ······	Sets execution/error completion type
MOV MOV EN ENO Var_ControlData[2] Var_ControlData[2]	Sets channel used by host station
H0— s d —Var_ControlData[3]	Sets target station's CPU type
EN ENO s d Var_ControlData[4]	Sets target station network number
EN ENO ····································	Sets target station number
EN ENO s d Var_ControlData[6]	· · ·
EN ENO ••••••••••••••••••••••••••••••••••••	Sets monitoring time
EN ENO s dVar_ControlData[9]	Sets data length by the word
EN MOV s d Var_ControlData[10]	• •
2 Var_Flag_Inst 10 EN EN EN EN D750 D750 C C C C C C C C C C C C C	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Sets write data to D750 to D753
	•
Var_Flag_Exe SB47 SW0A0.2 MOV I I I I I	Sets number of resends
· · · · · · · · · · · · · · · · · · ·	Performs writing
4 Var_Result[0] Process on completion of writing	Execution finished
Var_Result[1] Process on normal completion	Normal completion
Var_Result[1] Process on error completion	Error completion
EN ENO Var_ControlData[1] s d Var_ErrorCode	Stores error code

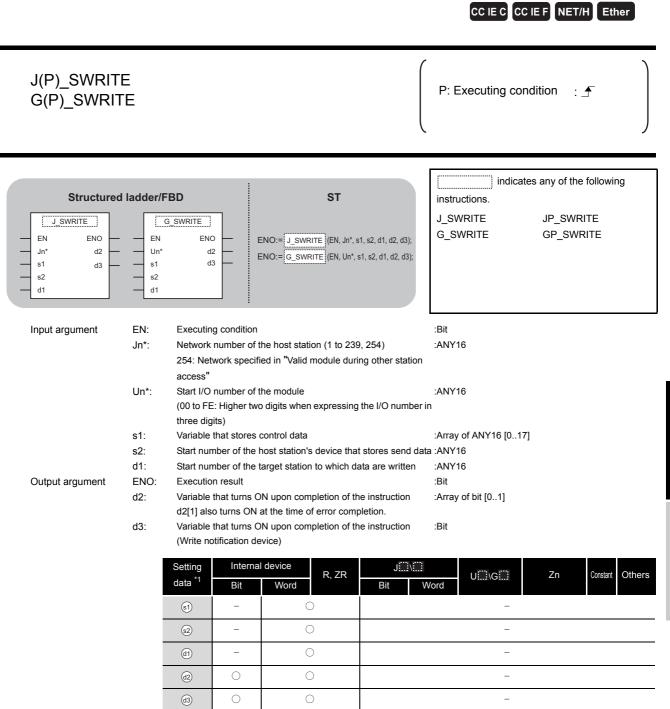
[Structured ladder/FBD]

[ST]	
IF (Var_Flag_Inst=TRUE) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
MOV(TRUE,2,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,3,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,0,Var_ControlData[6]);	
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,4,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]);	
END_IF; IF (LDP(TRUE,Var_Flag_Inst2)) THEN	
MOV(TRUE,10,D750);	(* Sets write data to D750 to D753 *)
MOV(TRUE,20,D751);	
MOV(TRUE,30,D752);	
MOV(TRUE,40,D753);	
END IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE)	AND (SW0A0.2=FALSE)) THEN
MOV(TRUE, 5, Var_ControlData[7]);	(* Sets number of resends *)
JP_WRITE(TRUE,1,Var_ControlData,D750),D300,Var_Result);
	(* Performs writing *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of writing *)	
IF(Var_Result[1]=FALSE)THEN	
(* Process on normal completion *)	
ELSE (* Process on error completion *)	
MOV(TRUE, Var_ControlData[1], Var	
	(* Stores error code *)
END IF;	
END_IF;	

5-162

5.4.11 SWRITE instruction

J_SWRITE, G_SWRITE



*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction writes data to a word device of another station.

Control Data

For the control data of the SWRITE instruction that writes data to the word device memory of another station, refer to WRITE instruction.

The control data of the SWRITE instruction are the same as those of the WRITE instruction. Accordingly, this section omits the explanation.

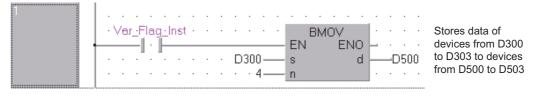
The following program example of the SWRITE instruction is different from that of the WRITE instruction by assigning the write notification device (3) at the end of arguments.

[Structured ladder/FBD]

(1) Program on the request source (station number 2) of the SWRITE instruction

· ∨ar_Flag_Inst MOV ↑ H81 EN0 s d	Sets execution/error completion type
EN ENO s d Var_ControlData[2]	Sets channel used by host station
MOV EN EN s d	Sets target station's CPU type
Image: Movement of the second seco	Sets target station network number
EN ENO s d Var_ControlData[5]	Sets target station number
EN ENO s d Var_ControlData[6]	
MOV EN ENO s d Var_ControlData[8]	Sets monitoring time
MOV EN ENO s d	Sets data length by the word
MOV Control Data[10] MOV S	
2 • Var_Flag_Inst • • • • • • • • • • • • • • • • • • •	
	Sets write data to D750 to D753
→ → → → → → → → → → → → → → → → → → →	
³ Var_Flag_Exe SB47 · SW0A0.2 · · · MOV	
Image: Second	Performs writing
EN EN ENO - <td></td>	
4 Ver Deselfm	
Var_Result[0] Process on completion of writing	Execution finished
Var_result[1] Process on normal completion	Normal completion
Process on error completion	Error completion
MOV EN ENO 	Stores error code

(2) Program on the request target (station number 3) of the SWRITE instruction



[ST]

(1) Program on the request source (station number 2) of the SWRITE instruction

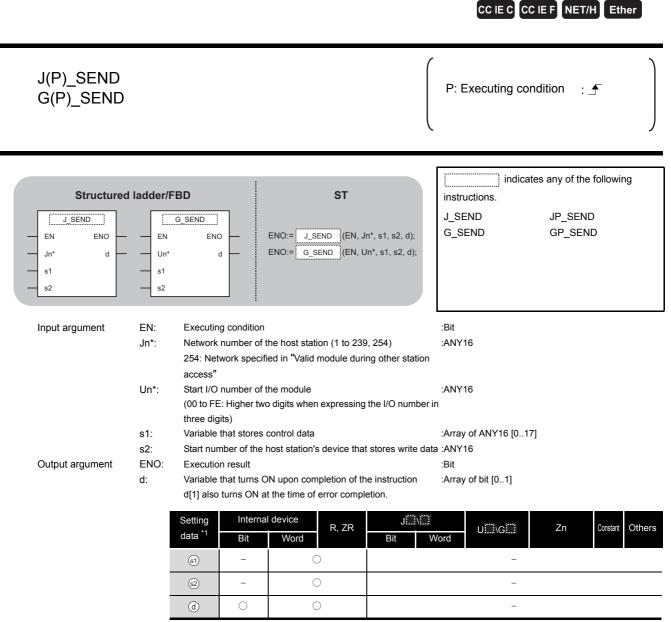
	Fiogram on the request source (station numbe	
	IF (Var_Flag_Inst=TRUE) THEN	
	MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
	MOV(TRUE,2,Var_ControlData[2]);	(* Sets channel used by host station *)
	MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
	MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
	MOV(TRUE,3,Var_ControlData[5]);	(* Sets target station number *)
	MOV(TRUE,0,Var_ControlData[6]);	, ,
	MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
	MOV(TRUE,4,Var_ControlData[9]);	(* Sets data length by the word *)
	MOV(TRUE,0,Var_ControlData[10]);	
	END_IF;	
	IF (Var_Flag_Inst2=TRUE) THEN	
	MOV(TRUE,10,D750);	(* Sets write data to D750 to D753 *)
	MOV(TRUE,20,D751);	
	MOV(TRUE,30,D752);	
	MOV(TRUE,40,D753);	
END_IF;		
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.2=FALSE))		
	MOV(TRUE, 5, Var_ControlData[7]);	
JP_SWRITE(TRUE,1,Var_ControlDat		
		(* Performs writing *)
	END_IF;	
		(* Execution finished *)
	IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
	(* Process on completion of writing *)	
	IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)		
	ELSE	
	ELSE (* Process on error completion *)	
MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END_IF;		
		,(,,
	END_IF;	
	_ ·	
Program on the request target (station number 3) of the SWRITE instruction		2) of the SM/DITE instruction
	IF(Var_Flag=TRUE) THEN	
	BMOV/(TRUE D300.4 D500) [.]	

(* Stores data of devices from D300 to D303 to devices from D500 to D503 *) $\mathsf{END_IF};$

(2)

5.4.12 SEND instruction

J_SEND, G_SEND



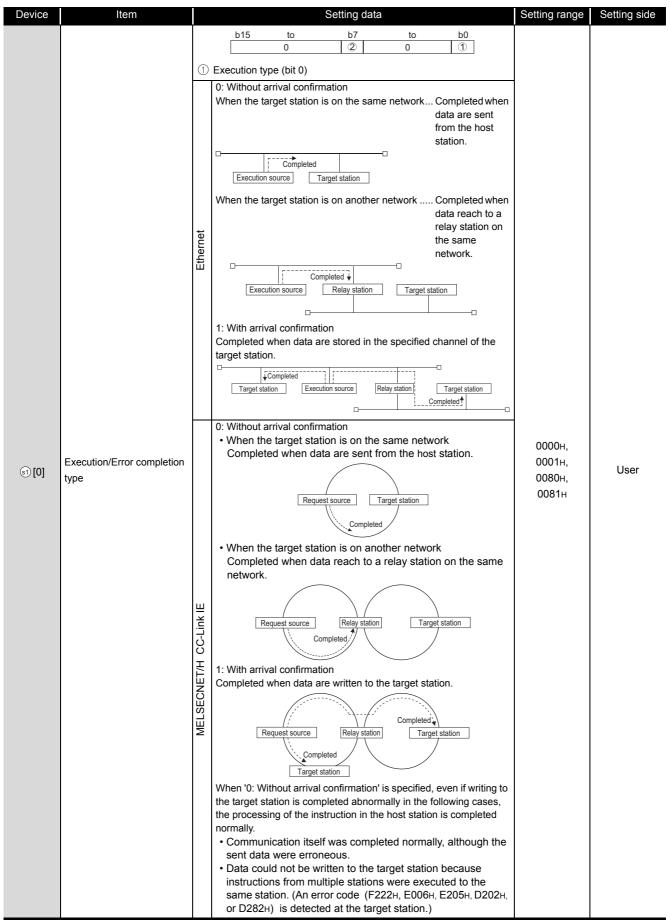
*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction sends data to another station.

J_SEND, G_SEND

Control Data



Device	Item	Setting data		Setting range	Setting side
জ [0]	Execution/Error completion type	 ② Error completion type (bit 7) Specify the clock data setup status at the time of O: Clock data at the time of error completion is not starting from (s) [11]. 1: Clock data at the time of error completion is set from (s) [11]. 	ot set in the area	0000н, 0001н, 0080н, 0081н	User
ഭി[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error completion)	de)	-	System
ৱ)[2]	Channel used by host station	CC-Link IE Controller Network	Setting value	1 to 8	User
(3) [3]	Target station channel	Ethernet	res data. ^{*2} Setting value I to 64 I to 8	1 to 64	User
্রা[4]	Target station network No.	Specify the network number of the target station. 1 to 239 : Network number 254 : Specify this when 254 has (Network specified in 'Valid station access')	been set in Jn.	1 to 239, 254	User

Device	Item	Setting data Specify the station number of the target station. (1) Station number specification		Setting range	Setting side	
		Setting value De	escription			
			o 64			
		Ethernet				
		CC-Link IE Controller Network				
		Host station is Universal model QCPU 1 to	o120			
		Host station is anything other than Universal model QCPU	o 64			
		CC-Link IE Field Network -				
		Master station 125	5 (7DH)			
		Local station or the intelligent device 1 to 1 to 1	o 120			
		To increase the data reliability when the station number executing the instruction with setting Execution/Error				
ৱা[5]	Target station No.	 ((s) [0]) to '1: With arrival confirmation' is recommended (2) Group specification (target station is anything othe CC-Link IE Field Network) 81н to А0н: All stations in group numbers 1 to 32 (Setting is available when Execution type is set to 	er than	1 to 120, 125 (7Dн) 81н to А0н, FFн	User	
		arrival confirmation' in 🔄 [0].)				
		Group No.1 · · · 81н				
		Group No.2 · · · 82н to				
		Group No.32 · · · А0н				
		(3) All stations specification FFH: All stations of the target network number (E: station.) (Setting is available when Execution type is set to				
		arrival confirmation' in 🗊 [0].)				
		To specify a group or all stations.				
		 Specify '0000H' or '03FFH' for the target station's CF Group specification cannot be set for the station of Field Network. It cannot be confirmed if the data are written to the normally. Confirm the device of the target station of destination. 	the CC-Link IE target station			
s1[6]	-	(Fixed value)		0	User	
		 For instruction execution Specify the number of instruction resends when the in 	nstruction is not			
s1[7]	Number of resends	completed within the monitoring time specified in (a) [8 available when Execution type is set to '1: With arrival (a) [0].)		0 to 15	User	
		 At instruction completion The number of resends (result) is stored. (Setting is av Execution type is set to '1: With arrival confirmation' in 		_	System	

Device	Item		Setting data		Setting range	Setting side
		Specify the monitoring is available when Exec in (1) [0].) If the instruction is not number of times specif				
(8)		Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second) 0: 10 seconds	0 to 16383	0 to 32767	User
		MELSECNET/H CC-Link IE	1 to 32767: 1 to 32767 seconds	0 to 32767		
s1 [9]	Send data length	Specify the number of s	send data.		1 to 960	User
s1 [10]	(Reserved)		-		-	-
s1 [11]	Clock set flag ^{*1}	Valid/invalid status of th 0: Invalid 1: Valid	ne data in the area starting fro	m 🗊 [12] is stored.	_	System
ৱা [12] to ৱা [15]	Clock data at the time of error completion ^{*1}	Clock data at the time of b15 to (a) [12] Month (01H (a) [13] Hour (00H (b) [14] Second (00 (c) [15] Year (00H to 99H)	н to 12н) Year (00н to 99н) Las to 23н) Day (01н to 5 н to 59н) Minute (00н to	b0 st two digits 31H) o 59H) H to 06H)	-	System
ঃা [16]	Error-detected network		station where an error was d or was detected at the host s ber		-	System
্রা [17]	Error-detected station No.*1	(However, when an err number is not stored.) Setti MELSECNET/H Ethernet CC-Link IE Controller CC-Link IE Field Netw Master station	1 Network 1 vork 1 1 he intelligent device		_	System

*1 : Data are stored only when 1 is set in bit 7 of Error completion type ((s) [0]).

*2: Logical channel setting is not available for the CC-Link IE network module.

5.4 Network Dedicated Instruction

5.4.12 SEND instruction

MODULE DEDICATED

J_SEND, G_SEND

Program Example

The following program sends data of the devices from D750 to D753 of the station number 1 (host station) to the channel 5 of the station number 2 (target station).

For the method for reading the data, which are sent by the SEND instruction, from the channel 5 of the station number 2 (target station), refer to the following sections.

For reading out data in a main program

Section 5.4.13 RECV instruction

For reading out data in an interrupt program

Section 5.4.14 RECVS instruction

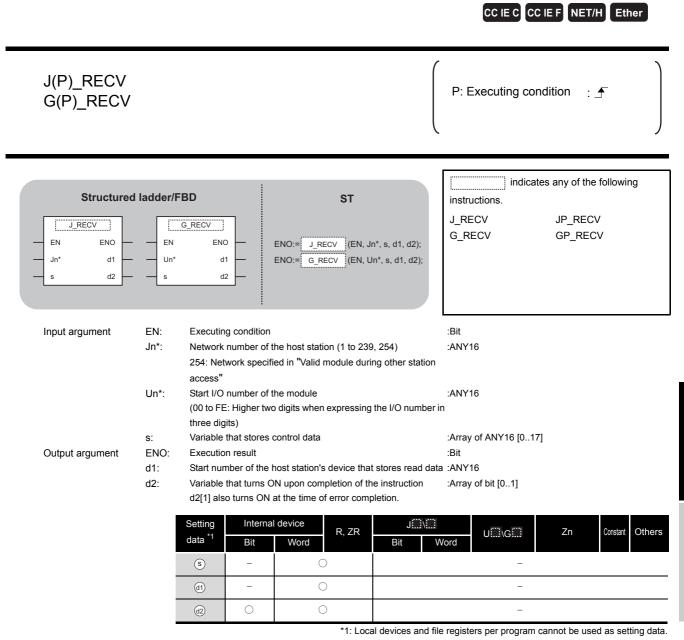
[Structured ladder/FBD]

1	· Var_Flag_Inst MOV ∬↑ EN H81 s d Var_ControlData[0]	Sets execution/error completion type
	EN ENO 3	Sets channel used by host station
	EN ENO H5—s d —Var_ControlData[3]	Sets target station channel
	EN ENO	Sets target station network number
	EN ENO 2	Sets target station number
	MOV	· · ·
	EN ENO Var_ControlData[8]	Sets monitoring time
	EN ENO 	Sets data length by the word
	MOV MOV EN ENO S d Var_ControlData[10]	
2	Ver_Flag_Inst MOV ↑ EN ENO 0 10 s d 0 EN ENO	
	20 s d D751	Sets send data to D750 to D753
3	40 s d D753 Var_Flag_Exe SB47 SW0A0.1 MOV EN EN EN Var_ControlData[7]	Sets number of resends
	JP_SEND Image: Stress of the stress of th	Sends data
4	Var_Result[0] Process on completion of sending	Execution finished
	Var_Result[1] Var_Result[1] Var_Result[1]	Normal completion
	Process on error completion	Error completion
	MOV EN EN Var_ControlData[1] s d	Stores error code

[ST] IF (Var_Flag_Inst=TRUE) THEN MOV(TRUE,H81,Var_ControlData[0]); (* Sets execution/error completion type *) MOV(TRUE,3,Var_ControlData[2]); (* Sets channel used by host station *) MOV(TRUE,H5,Var ControlData[3]); (* Sets target station channel *) MOV(TRUE,1,Var ControlData[4]); (* Sets target station network number *) (* Sets target station number *) MOV(TRUE,2,Var_ControlData[5]); MOV(TRUE,0,Var_ControlData[6]); MOV(TRUE,0,Var_ControlData[8]); (* Sets monitoring time *) MOV(TRUE,4,Var_ControlData[9]); (* Sets data length by the word *) MOV(TRUE,0,Var ControlData[10]); END IF; IF (Var_Flag_Inst2=TRUE) THEN MOV(TRUE, 10, D750); (*Sets send data to D750 to D753 *) MOV(TRUE,20,D751); MOV(TRUE, 30, D752); MOV(TRUE,40,D753); END IF; IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN MOV(TRUE, 5, Var_ControlData[7]); (* Sets number of resends *) JP_SEND(TRUE,1,Var_ControlData,D750,Var_Result);(* Sends data *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) -----(* Process on completion of sending *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) _____ (* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *) ···· / MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END IF; END IF;

5.4.13 RECV instruction

J_RECV, G_RECV



Grant Function

This instruction reads received data (for main program).

Control Data

Device	Item		Setting data			Setting range	Setting side
® [0]	Error completion type	b15 to 0 (1) Error completion typ Specify the clock data s 0: Clock data at the tim starting from (§ [11]. 1: Clock data at the tim from (§ [11].	(bit 7) setup status at the time e of error completion is e of error completion is	not set	in the area	0000н, 0080н	User
ি [1]	Completion status	Other than 0 : Err	rmal completion or completion (error c			-	System
ঙ [2]	Host station channel	Specify the channel of I Des MELSECNET/H Ethernet CC-Link IE Control CC-Link IE Field N	cription		data. ing value	1 to 8	User
s [3]	Channel used by sending station	Channel used by the se 1 to 8: Channel	ending station is stored.			-	System
<u>ি</u> [4]	Network No. of sending station	Network number of the 1 to 239: Network n	-	ed.		_	System
٤)[5]	Sending station No.	MELSECNET/H Ethernet CC-Link IE Controller CC-Link IE Field Netw Master station	ng value	De 1 to 1 to - 125	escription 64 120 (7Dн) 120	_	System
<u>\$[6]</u>	(Reserved)		-			_	
§[7]	(Reserved)		_			_	
		Specify the monitoring to When the instruction is completes abnormally.	not completed within th		oring time, it		
s [8]	Arrival monitoring time	Ethernet CC-Link IE MELSECNET/H	0 to TCP retransmissi timer value: Monitorin performed by the TCF retransmission timer v (TCP retransmission t value + 1) to 16383: Monitoring time (unit: second) 0: 10 seconds 1 to 32767: 1 to 32767 seconds	g is value. timer	Setting value 0 to 16383 0 to 32767	0 to 32767	User

Device	Item	Setting data	Setting range	Setting side
s [9]	Receive data length	The number of received data stored in (1) to (1) + n is stored.0: No receive data1 to 960: Number of words of receive data	-	System
s[10]	(Reserved)	_	-	-
s [11]	Clock set flag ^{*1}	Valid/invalid status of the data in the area starting from (§) [12] is stored. 0: Invalid 1: Valid	_	System
জ [12] to জ [15]	Clock data at the time of error completion ^{*1}	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (a) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (b) [13] Hour (00H to 23H) Day (01H to 31H) b1 (c) [14] Second (00H to 59H) Minute (00H to 59H) b1 (c) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) 00H (Sun.) to 06H (Sat.)	-	System
ঙ [16]	Error-detected network No. *1	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number	_	System
ঙ [17]	Error-detected station No.*1	Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) Setting value Description MELSECNET/H 1 to 64 Ethernet 1 to 120 CC-Link IE Controller Network - Master station 125 (7DH) Local station or the intelligent device station 1 to 120	_	System

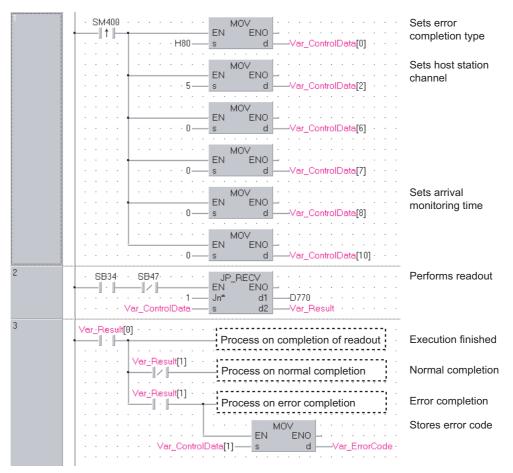
*1 : Data are stored only when 1 is set in bit 7 of Error completion type ((^(§)[0]).

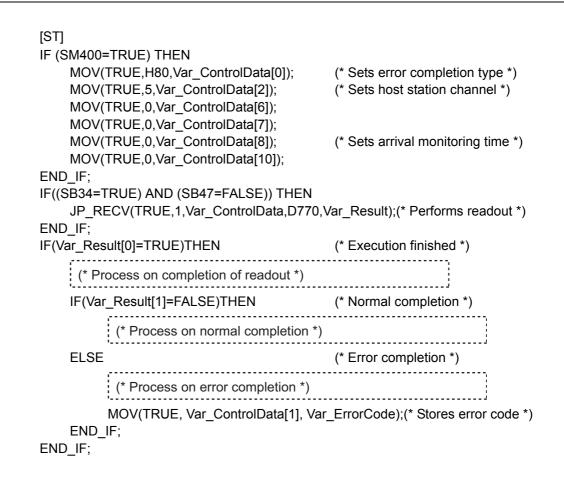
Program Example

The following program reads out data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when SB0034 turns ON. For the SEND instruction, refer to the following section.

Section 5.4.12 SEND instruction

[Structured ladder/FBD]





5.4.14 RECVS instruction

Z_RECVS

CC IE C CC IE F NET/H Ether

Z_RECVS

Structured EN Jn* s1 s2			NO:=	ST	in*, s1, s2, d)		Z_RE0		tes the follo	owing instru	uction.
Input argument	EN:		g condition				:Bit				
	Un*:		-		expressing	the I/O number in	:String n				
	s1:	Variable	that stores of	control data			:Array o	of ANY16 [017	7]		
	s2:	Start nur	mber of the h	nost station's	device that	stores read data	a :ANY16	3			
Output argument	ENO:	Executio	on result				:Bit				
	d:	Dummy					:Bit				
		Setting	Internal		R, ZR	J\		U\G	Zn	Constant	Others
		data ^{*1}	Bit	Word		Bit V	Vord				
		<u>s1</u>	-	C)			-			
	1	62	-	C)			_			
	- T	d	0	C)			_			

1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads received data (for interrupt program).

Control Data

Device	Item	Setting data		Setting range	Setting side
§[0]	Completion type	b15 to 0 (Fixed)	b0	0	User
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)		-	System
৽ [2]	Host station channel	Specify the channel of host station that stores receive of Description Sett MELSECNET/H 1 to 8 CC-Link IE Controller Network 1 to 2	data. t ing value	1 to 8	User
s [3]	Channel used by sending station	Channel used by the sending station is stored. 1 to 8: Channel		-	System
ি [4]	Network No. of sending station	Network number of the sending station is stored. 1 to 239: Network number		-	System
ঙ [5]	Sending station No.	MELSECNET/H 1 to Ethernet 1 to CC-Link IE Controller Network - CC-Link IE Field Network - Master station 125	escription 64 120 6 (7Dн) 120	Ι	System
\$[6] \$[7] \$[8]	System area	_		_	-
ි [9]	Receive data length	The number of received data stored in d1 to d1 + n is 0 : No receive data 1 to 960 : Number of words of receive data		-	System
জ [10] to জ [17]	System area	-		-	-

Z_RECVS

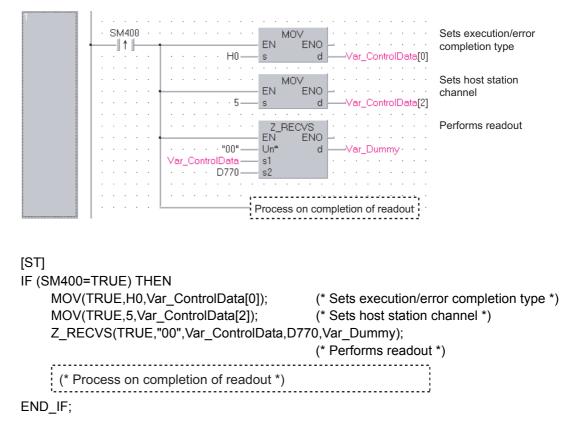
Program Example

The following program reads data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when an interruption program starts up.

For the SEND instruction, refer to the following section.

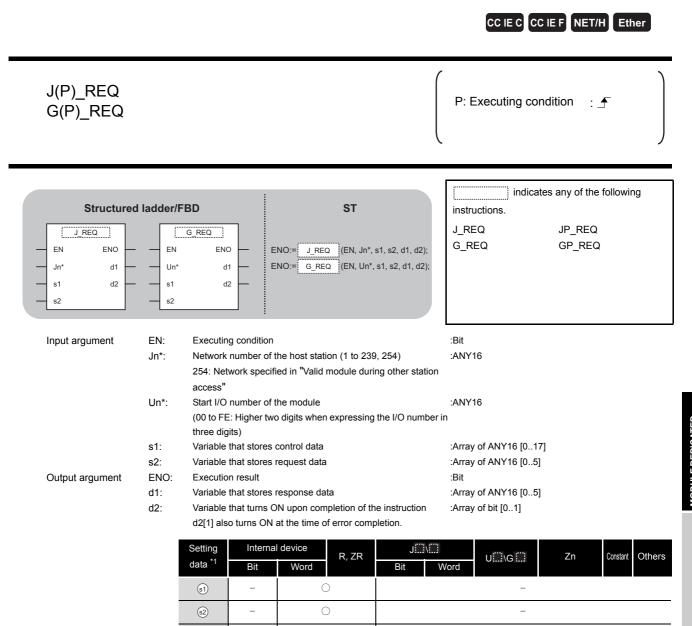
Section 5.4.12 SEND instruction

[Structured ladder/FBD]



5.4.15 REQ instruction

J_REQ, G_REQ



*1: Local devices and file registers per program cannot be used as setting data.

_



Remotely runs or stops a programmable controller on another station.

 \bigcirc

(d1)

d2)

_

Also, reads/writes clock data from/to a programmable controller on another station.

E Control Data

Device	Item			Setting data	Setting range	Setting side
s) [0]	Error completion type	Specify t 0: Clock from (1: Clock from (completion typ the clock data s data at the time s) [11]. data at the time s) [11].	be (bit 7) Betup status at the time of error completion. E of error completion is not set in the area starting e of error completion is set in the area starting	0011н, 0091н	User
st)[1]	Completion status	0 Other	ruction complet : No : than 0 : Err	-	System	
গ্ৰ [2]	Channel used by host station		he channel use : Channel	1 to 8	User	
s) [3]	Target station's CPU type	MELSECNET/H CC-Link IE	ting value 0000н 03FFн ^{*1} 0000н 03E0н ^{*2} 03E1н ^{*2} 03E2н ^{*2} 03E3н ^{*2} 03FFн ^{*1}	Description Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Target station CPU/host system CPU Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Multi-CPU No. 1/target station CPU (single CPU system) Multi-CPU No. 2 Multi-CPU No. 3 Multi-CPU No. 4 Target station CPU/host system CPU	0000н, 03FFн 0000н, 03E0н to 03E3н, 03FFн	User
st)[4]	Target station network No.	Specify t 1 to 2 254	39 : Ne : Spe (Ne	nber of the target station. twork number ecify this when 254 has been set in Jn. twork specified in 'Valid module during other station ess')	1 to 239, 254	User

Device	Item		Setting data		Setting range	Setting side	
			mber of the target station.				
		(1) Station number	specification				
		Sett	ing value	Description			
		MELSECNET/H		1 to 64			
		Ethernet					
		CC-Link IE Controller		-			
		Host station is U	niversal model QCPU	1 to120			
		Host station is an	nything other than	1 to 64			
		Universal model	QCPU	110 04			
		CC-Link IE Field Net	work	-			
		Master station		125 (7Dн)			
		Local station or t station	he intelligent device	1 to 120			
		(2) Group specification (t CC-Link IE Field Netw	n (target station is anything	other than	1 to 120,		
(s) [5] Target station No.		s in group numbers 1 to 32 (Available only at clock	125 (7Dн) 81н to А0н, FFн	User		
			Group No.1 · · · 81н Group No.2 · · · 82н				
			to Group No.32 · · · А0н				
		(3) All stations specific FFH: All stations of station.) (Availabl STOP)					
		To specify a group or a	all stations.				
		• Specify '0000н' or '0) 3FFн' for the target station's	s CPU type (🗊 [3]).			
			Group specification cannot be set for the station of the CC-Link IE				
		Field Network.	od if the data are written to t	the target station			
			ed if the data are written to the device of the target station	-			
		destination.					
s1[6]	_	(Fixed value)			0	User	
		(1) For instruction exe	cution				
		Specify the number of	resends when the instructio	n is not completed	0 to 15	User	
s 1 [7]	Number of resends		ime specified in 🗊 [8].	·			
		② At instruction com			0 to 15	System	
		The number of resend		tion completion			
			time required for the instruct completed within this time,	-			
		number of times speci					
		D	escription	Setting value			
			0 to TCP retransmission				
			timer value: Monitoring is				
ាទេរ	Arrival monitoring time		performed by the TCP		0 to 32767	User	
ာဂြ		Ethernet	retransmission timer value	0 to 16383		Ji Usei	
			•	r			
			- ·				
		<u> </u>					
		MELSECNET/H		0 to 32767			
	1	CC-Link IE		0 10 02101			
st [8]	Arrival monitoring time			0 to 16383	0 to 32767		

Device	Item	Setting data		Setting range	Setting side
st) [9]	Request data length	Specify the number of request data (words). (Number of words of the data stored in request data 4: Remote RUN 3: Remote STOP 2: Clock data read 6: Clock data write	2 to 4, 6	User	
st [10]	Response data length	Number of response data (words) are stored. (Number of words of the data stored in response da 2: Remote RUN/STOP 6: Clock data read 2: Clock data write	_	System	
s1[11]	Clock set flag ^{*3}	Valid/invalid status of the data in the area starting fi 0: Invalid 1: Valid	-	System	
জ [12] to জ [15]	Clock data on error completion ^{*3}	Clock data at the time of error completion are store b15 to b8 b7 to (a) [12] Month (01H to 12H) Year (00H to 99H) Lz Year (00H to 99H) Lz (a) [13] Hour (00H to 23H) Day (01H to (a) [14] Second (00H to 59H) Minute (00H (a) [15] Year (00H to 99H) First two digits Day of week (00H (00H (Sun.) to 0) 00H (Sun.) to 0)	b0 ast two digits 2 31н) to 59н) Он to 06н)	_	System
গ্রা [16]	Error-detected network No. *3	Network number of the station where an error was (However, when an error was detected at the host : number is not stored.) 1 to 239: Network number		-	System
ട്][17]	Error-detected station No.	Ethernet - CC-Link IE Controller Network - CC-Link IE Field Network - Master station -		_	System

*1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)
 *2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

- Network module: The first five digits of the serial number are '06092' or higher.
- QCPU: The first five digits of the serial number are '06092' or higher.

*3 : This becomes valid only when 1 is set in bit 7 of Error completion type ((s) [0]).

(1) Remote RUN/STOP

Request data (all set by the user)

Device	Item	Description	Remote RUN	Remote STOP
	Request type	0010 H : When station number is specified in (\mathfrak{s}) [5]	0	0
s2 [0]	Request type	0030н: When all stations a group is specified in \textcircled{s} [5]	0	0
©[1]	Sub-request type	0001H: Remote RUN	0	0
ଞାଏ		0002н: Remote STOP		Ŭ
		Specify whether to forcibly execute remote RUN/STOP. The forced		
		execution is a function that forces a station which has stopped by		
		remote STOP to RUN remotely from another station.		
		For remote RUN		
s2 [2]	Operation mode	0001H: No forced execution	0	0
		0003н: Forced execution (This setting can be specified for		
		remote RUN.)		
		• For remote STOP		
		0003H: (Fixed)		
		Specify the status of device memory in the CPU module only for		
		remote RUN.		
		0000H: Not cleared (Note that the local devices are cleared.)		
		0001H: Cleared (excluding the latch range and settings in remote RUN)		
		0002H: Cleared (including the latch range and settings in remote		
s2 [3]	Clear mode	RUN)	0	×
0101		Clear mode (@ [3]) allows specification to clear (initialize) the devices		
		in the CPU module at the start of CPU module operation activated by		
		remote RUN.		
		After performing the specified clear processing, CPU module runs		
		according to the setting that specified by Device Initial Value in GX		
		Works2.		

Response data^{*1} (all set by the system)

Device	Item	Description	Remote RUN	Remote STOP	
@[0]	Request type	0090н: When station number is specified in $\textcircled{s1}$ [5]	0	0	
(U)		00В0н: When all stations or a group is specified in ${}_{\scriptsize \ensuremath{\mathfrak{S}}\mathfrak$		Ŭ	
@1[1]	Sub-request type	0001н: Remote RUN	0	0	
ալո		0002H: Remote STOP	\bigcirc	0	

*1: When "all stations or a group (81H to A0H, FFH)" is specified in (s) [5], no response data will be stored.

(2) Reading/writing the clock data

Request data (all set by the user)

Device	Item	Setting data	Read clock data	Write clock data
፼[0]	Request type	0001н: Clock data read 0011н: Clock data write (When station number is specified in ङ)[5]) 0031н: Clock data write (When all stations or a group is specified in ङ्ग [5])	0	0
©[1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
@[2]	Change pattern Clock data to be changed	① Change pattern (bit 0 to 7) Specify the items to be written in high-order byte of @ [2] to @ [5]. 0: Not changed 1: Changed ② Year to be changed (bit 8 to 15)*1 Store the year (last two digits) in BCD format. b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 Year (00н to 99н) 0	×	0
s2 [3]		High-order 8 bits: Day (01H to 31H), low-order 8 bits: Month (01H to 12H) b15 to b8 b7 to b0 Day (01H to 31H) Month (01H to 12H)	×	0
s2 [4]	Clock data to be changed (continued)	bits: Minute (00н to 59н), low-order 8 bits: Hour (00н to 23н) b15 to b8 b7 to b0 Minute (00н to 59н) Hour (00н to 23н)	×	0
@ [5]		High-order 8 bits: Day of week (00н (Sunday) to 06н (Saturday)), low-order 8 bits: Second (00н to 59н) <u>b15 to b8 b7 to b0</u> <u>Day of week (00н to 06н)</u> <u>Second (00н to 59н)</u> <u>00н (Sun.) to 06н (Sat.)</u>	×	0

*1 : This function cannot change the first two digits of year data.

To change the year data including the first two digits, set the clock data using another function (such as GX Works2).

Device	Item	Setting data	Read clock data	Write clock data
@[0]	Request type	0081н: Clock data read 0091н: Clock data write (When station number is specified in ङ)[5]) 00В1н: Clock data write (When all stations or a group is specified in ङ)[5])*2	0	0
d1 [1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
@[2]		High-order 8 bits: Month (01н to 12н), low-order 8 bits: Year (00н to 99н) *3 b15 to b8 b7 to b0 Month (01н to 12н) Year (00н to 99н)	0	×
@[3]	*	High-order 8 bits: Hour (00н to 23н), low-order 8 bits: Day (01н to 31н) b15 to b8 b7 to b0 Hour (00н to 23н) Day (01н to 31н)	0	×
d1 [4]	Read clock data	High-order 8 bits: Second (00н to 59н), low-order 8 bits (00н to 59н) b15 to b8 b7 to b0 Second (00н to 59н) Minute (00н to 59н)	0	×
d 1 [5]		High-order 8 bits: (00н), low-order 8 bits: Day of week (00н (Sunday) to 06н (Saturday)) b15 to b8 b7 to b0 00н Day of week (00н to 06н) o0h (Sun.) to 06h (Sat.)	0	×

Response data (all set by the system)

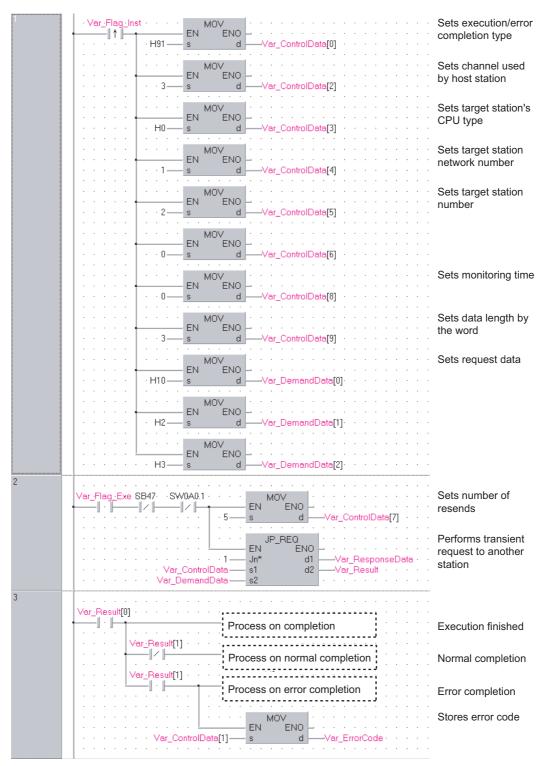
*2: When "all stations or a group (81H to A0H, FFH)" is specified in (s) [5], no response data will be stored.

*3: Last two digits of year data

Program Example

The following program performs remote STOP to the QCPU, which is the station number 2 (target station).

[Structured ladder/FBD]



```
[ST]
IF (Var_Flag_Inst=TRUE) THEN
    MOV(TRUE,H91,Var_ControlData[0]); (* Sets execution/error completion type *)
                                      (* Sets channel used by host station *)
    MOV(TRUE,3,Var_ControlData[2]);
    MOV(TRUE,H0,Var ControlData[3]); (* Sets target station's CPU type *)
    MOV(TRUE,1,Var ControlData[4]);
                                      (* Sets target station network number *)
    MOV(TRUE,2,Var_ControlData[5]);
                                      (* Sets target station number *)
    MOV(TRUE,0,Var ControlData[6]);
    MOV(TRUE,0,Var_ControlData[8]);
                                      (* Sets monitoring time *)
    MOV(TRUE,3,Var_ControlData[9]);
                                      (* Sets data length by the word *)
    MOV(TRUE,H10,Var_DemandData[0]);(* Sets request data *)
    MOV(TRUE,H2,Var_DemandData[1]);
    MOV(TRUE,H3,Var DemandData[2]);
END_IF;
IF((Var Flag Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN
    MOV(TRUE, 5, Var ControlData[7]); (* Sets number of resends *)
    JP_REQ(TRUE,1,Var_ControlData,Var_DemandData,Var_ResponseData,Var_Result);
                                 (* Performs transient request to another station *)
END_IF;
IF(Var Result[0]=TRUE)THEN
                                       (* Execution finished *)
               (* Process on completion *)
    IF(Var Result[1]=FALSE)THEN
                                      (* Normal completion *)
                         -----
```

(* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *)

MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END_IF;

END_IF;

REQ, G_REQ

5-191

5.4.16 ZNRD instruction

J ZNRD

CC IE C NET/H Ether J(P)_ZNRD P: Executing condition : _ indicates any of the following Structured ladder/FBD ST instructions. J_ZNRD JP_ZNRD J_ZNRD ΕN ENO ENO:= J_ZNRD (EN, Jn*, n1, s, n2, d1, d2); d1 Jn n1 d2 s n2 :Bit Input argument FN. Executing condition Network number of the host station (1 to 239) ·ANY16 Jn*: n1: Target station number (1 to 64) :ANY16 s Target station's start device number where data to be read are :ANY16 stored Read data length :ANY16 n2: When the target station is Q/QnA/AnUCPU: 1 to 230 words When the target station is anything other than Q/QnA/ AnUCPU: 1 to 32 words ENO: Output argument Execution result ·Bit The host station's start device number where readout data will :ANY16 d1: be stored (A contiguous area for the read data length is required.) d2: The host station's device that is turned on for one scan upon :Array of bit [0..1] completion of the instruction d2[1] also turns ON if the instruction execution has failed. Setting Internal device J...\... Constant R, ZR U....\G.... Zn Others data *1,*2 Word Word Bit Bit n1 _ _ _ S _ _ _ _ n2 _ _ 0 _ _ _ d1) _ _ d2)

*1: Local devices and file registers per program cannot be used as setting data.

*2: In addition to the setting data, the ZNRD instruction is executed using the following fixed values. Channel used by host station: Channel 1

Arrival monitoring time (monitoring time until instruction completion): 10 seconds Number of resends for arrival monitoring timeout: 5 times

Grant Function

This instruction reads data from devices of a programmable controller CPU on another station. (In units of words)

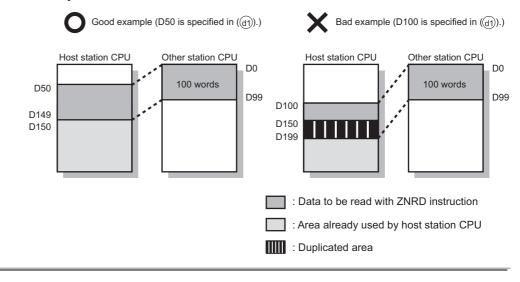
1. Specify devices of the target station's CPU within the range allowed for the host station CPU when reading data from the devices with the ZNRD instruction.

(Target station's start device number ${\scriptstyle \textcircled{\tiny sl}}$ where data to be read are stored)

- + (Read points 1) \leq (End device No. of host station's CPU^{*1})
- Specify the host station's start device number

 within the range allowed for storing read data.

(Example) When D150 and after the area in the host station's CPU has been already used



_ZNRD

5

Program Example

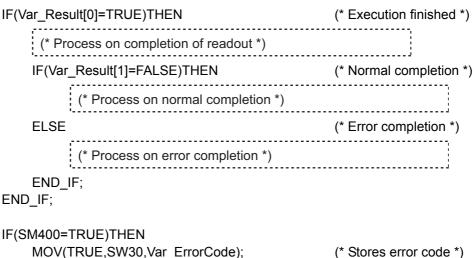
In this program example, when M101 turns ON, data in D250 to D254 of station No.4 (target station) are read out to D700 to D704 of station No.1 (host station).

M101+ + SB47+ · · SW0A0.3 · · JP_ZNRD Performs readout ΕN ENO 121 -121 · · 1 — Jn* d1 -D700 4n1 d2 -Var_Result D250 · 5 ······ Var_Result[0] - || ŀ Process on completion of readout No. of the last Var_Result[1] —I/H Process on normal completion Propos Var_Result[1] Process on error completion -|| • ||-3 SM400 MOV Stores error code ENO - · · · EN -|| • ||-SW30-d S

[Structured ladder/FBD]

[ST]

IF((M101=TRUE) &(SB47=FALSE) & (SW0A0.3=FALSE)) THEN JP_ZNRD(TRUE,1,4,D250,5,D700, Var_Result);(* Performs ZNRD instruction*) END_IF;

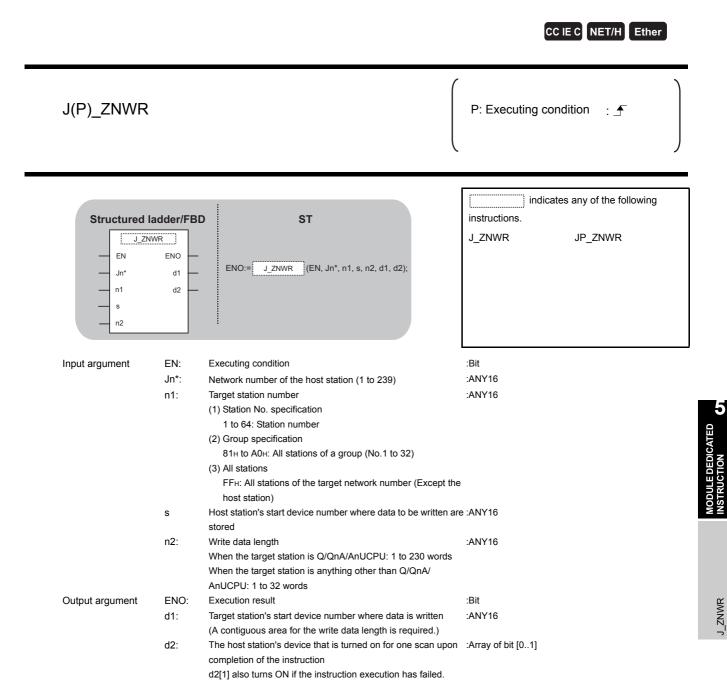


END_IF;

"Stores error code ")

5.4.17 ZNWR instruction

J_ZNWR



Setting	Interna	l device	R, ZR			U∭\G∭	Zn	Constant	Others
data *1,*2	Bit	Word	, <u>2</u> , 1	Bit	Word	0:	— ——	K, H	Othero
n1		0				_		0	-
s	-	0	-	_		-	-		
n2	0				-		_	-	
d1	-	- 0		-			0	-	
d2	0					_		-	-

*1: Local devices and file registers per program cannot be used as a device which is used in setting data.

*2: In addition to the setting data, the ZNWR instruction is executed using the following fixed values. Channel used by host station: Channel 2

Arrival monitoring time (monitoring time until instruction completion): 10 seconds Number of resends for arrival monitoring timeout: 5 times

Grant Function

This instruction writes data to devices of a programmable controller CPU on another station. (In units of words)

1. Specify devices of the target station's CPU within the range allowed for the host station CPU when writing data to the devices with the ZNWR instruction.

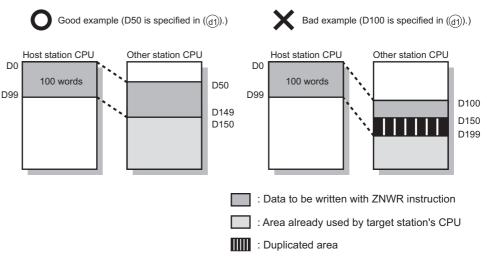
(Target station's start device number ${\ensuremath{\, \ensuremath{\scriptscriptstyle \otimes }}}$ where data are written)

+ (Write points - 1) \leq (End device No. of host station's CPU ^{*1})

- *1 End device No. of the device in the host station CPU, and whose device name is same as in ${\scriptstyle \textcircled{s}}$

write data.

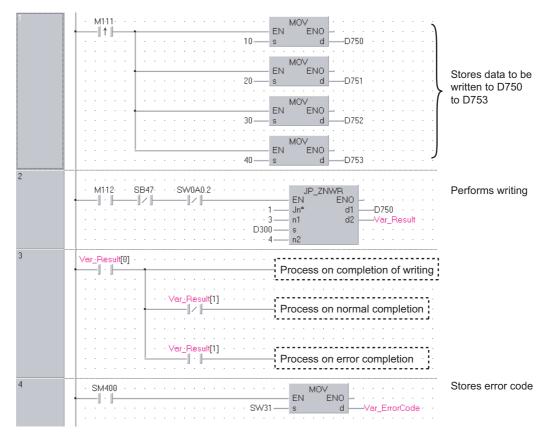
(Example) When D150 and after the area in the host station's CPU has been already used



Program Example

In this program example, when M112 turns ON, data in D750 to D753 of station No.2 (host station) are written to D300 to D303 of station No.3 (target station).

[Structured ladder/FBD]



[ST] IF(M111=TRUE)THEN MOV(TRUE, 10, D750); MOV(TRUE, 20, D751); MOV(TRUE, 30, D752); MOV(TRUE, 40, D753);	(* Instruction flag ON *)
END_IF;	(* Stores data to be written to D750 to D753 *)
IF((M112=TRUE) &(SB47=FALSE) & (SW0 JP_ZNWR(TRUE,1,3,D300,4, D750, END_IF;	DA0.2=FALSE)) THEN Var_Result); (* Performs writing *)
IF(Var_Result[0]=TRUE)THEN	(* Completion of writing *)
(* Process on completion of writing	*)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal complet	
ELSE	(* Error completion *)
(* Process on error completio	· · · · · · · · · · · · · · · · · · ·
END_IF; END_IF;	
IF(SM400=TRUE)THEN MOV(TRUE,SW31,Var_ErrorCode); END IF;	(* Stores error code *)

5.4.18 RRUN instruction

Z_RRUN_J, Z_RRUN_U

CC IE C NET/H

Z(P)_RRUN_ Z(P)_RRUN_			P: Executing condition :
Structured EN ENO Jn* d s1 s2 s3 s4		BD ST ENO d ENO:= Z_RRUN_J (EN, Jn*, s1, s2, s3, s4, d); ENO:= Z_RRUN_U (EN, Un*, s1, s2, s3, s4, d);	indicates any of the following instructions. Z_RRUN_J ZP_RRUN_J Z_RRUN_U ZP_RRUN_U
Input argument	EN: Jn*:	Executing condition Network number of the target station (1 to 239, 254) 254: Network specified in "Valid module during other station access"	:Bit :String
	Un*:	Start I/O number of the host station network No. (00 to FE: Higher two digits when expressing the I/O number in	:String
	s1:	three digits) Channel used by host station For the RRUN instruction, specify the channel used by host station that is the same as the one used for the RSTOP	:ANY16
	s2:	instruction. Target station number (1) Station number specification Host station is Universal model QCPU: 1 to 120 Host station is anything other than Universal model QCPU: 1 to 64 (2) Group specification 81H to A0H: All stations of a group (No.1 to 32) (3) All stations	:ANY16
		FFн: All stations of the target network No. (Except the host station) To specify a group or all stations, specify '0000н' or '03FFн' for	r
	s3:	the target station's CPU type (s3). Target station's CPU type 0000H: Target station CPU/control CPU/host system CPU (Specified data are the same as '03FFH'.) 03E0H: Multi-CPU No. 1/ target station CPU (single CPU system) 03E1H: Multi-CPU No. 2	:ANY16
	s4:	03E2н: Multi-CPU No. 3 03E3н: Multi-CPU No. 4 03FFн: Target station CPU/control CPU/host system CPU Mode	:ANY16
Output argument	ENO: d:	Execution result Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Bit :Array of bit [01]

Setting	Internal	device	R, ZR	J\		U\G	Zn	Constant	Others
data ^{*1}	Bit	Word	н х , 2 нх	Bit	Word	0::\G::		K, H	othere
(s1)	-	C)			-		0	-
s2	-	C)			-		0	-
\$ 3	-	C)	-			0	-	
<u>s4</u>	-	C)			-		0	-
b	0	C)			-		-	-

1: Local devices and file registers per program cannot be used as setting data.

Grant Function

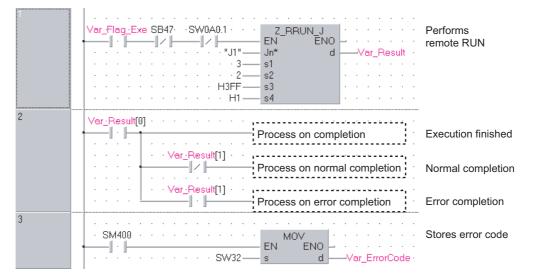
This instruction remotely switches a CPU module on another station to RUN.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to RUN.



[Structured ladder/FBD]

[ST] IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (Z_RRUN_J(TRUE,"J1",3,2,H3FF,H1,Var_Result); END_IF; IF(Var_Result[0]=TRUE)THEN	
· · · · · · · · · · · · · · · · · · ·	······································
(* Process on completion *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
END_IF;	

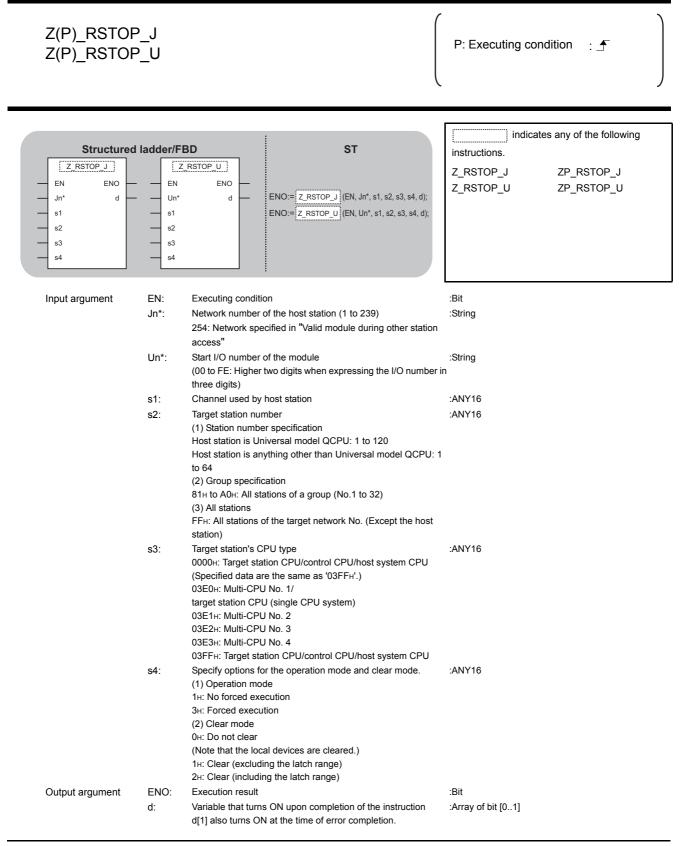
MOV(SM400,SW32,Var_ErrorCode);

(* Stores error code *)

5.4.19 RSTOP instruction

Z_RSTOP_J, Z_RSTOP_U

CC IE C NET/H



Setting	Interna	l device	R, ZR	J	\	 U∖G Zn				
data *1	Bit	Word	, <u>2</u> , 1	Bit	Word	20	K, H	Others		
s1)	-	0)			-		0	-	
s2	-	C)			_		0	-	
s3	-	C)			_		0	-	
<u>\$4</u>	-	C)			_		0	-	
d	0	C)			_		-	-	
			*1.1 000	l dovicos a	ad filo rogist	are por program	cannot he use	d ac cot	ting data	

1: Local devices and file registers per program cannot be used as setting data

Function

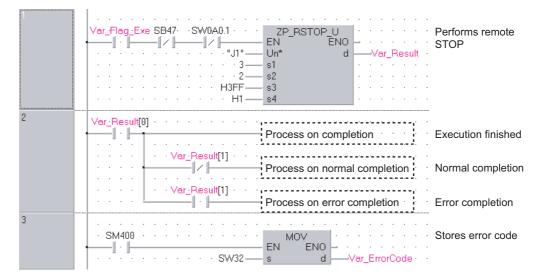
This instruction remotely switches a CPU module on another station to STOP.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to STOP.



[Structured ladder/FBD]

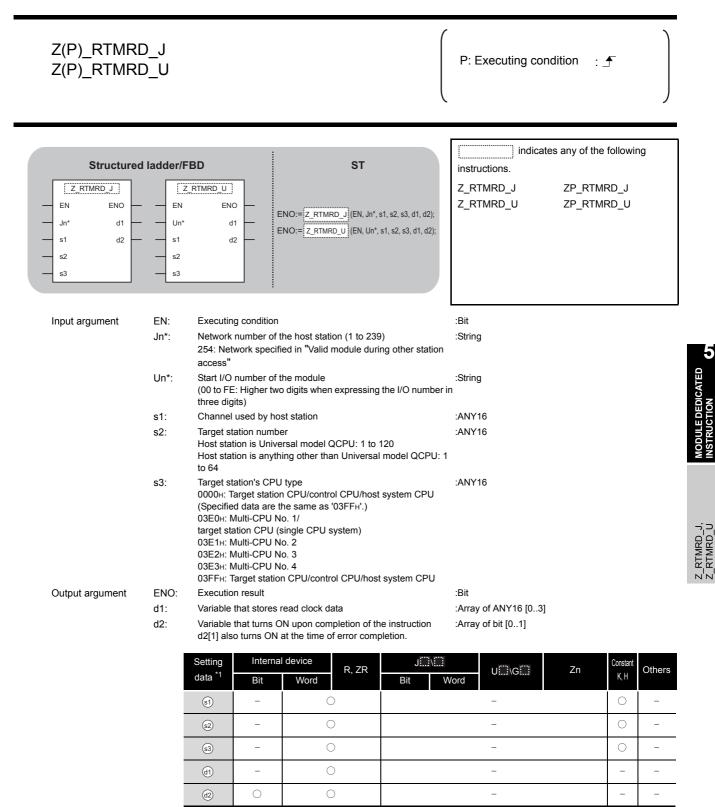
ODULE DEDICATED STRUCTION [ST] IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RSTOP_J(TRUE,"J1",3,2,H3FF,H1,Var_Result);(* Performs remote STOP *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) -----(* Process on completion *) _ ; IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) ELSE (* Error execution *) -----(* Process on error completion *) END IF; END_IF;

MOV(SM400, SW32, Var_ErrorCode); (* Stores error code *)

5.4.20 RTMRD instruction

Z_RTMRD_J, Z_RTMRD_U

CC IE C NET/H



*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads clock data from a CPU module on another station.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

[Structured ladder/FBD]

The following program reads out clock data from the QCPU on the station number 2 (target station) and stores the clock data in the station number 1 (host station).

/ar Flag Exe SB47 · SWRAR1 · ZP_RTMRD_J N ENO Reads clock data ΕŃ -171 from another station " I1"_ Jn* d1 -D300 · · s1 d2 -Var_Result - 4 - 2 s2 H3FF s3 2 Var_Result[0] · · · · · · · · · Execution finished Process on completion of readout Var_Result[1] Process on normal completion Normal completion Var_Result[1] _____ -|| · ||-Process on error completion Error completion 3 MOV SM400 -Stores error code ENO ΕN _ · · · SW34 d -----Var_ErrorCode · S

[ST]

IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RTMRD_J(TRUE,"J1",4,2,H3FF,D300,Var_Result); (* Reads clock data from another station *)

END_IF;

IF(Var_Result[0]=TRUE)THEN (* Execution finished *)
(* Process on completion of readout *)
IF(Var_Result[1]=FALSE)THEN (* Normal completion *)
(* Process on normal completion *)
ELSE (* Error completion *)
(* Process on error completion *)
END_IF;
END_IF;
MOV(SM400, SW33, Var_ErrorCode); (* Stores error code *)

5.4.21 RTMWR instruction

Z_RTMWR_J, Z_RTMWR_U

CC IE C NET/H

Z(P)_RTMW Z(P)_RTMW			P: Executing condition :
Structured EN ENO Jn* d s1 s2 s3 s4		BD ST ENO:= Z RTMWR_U d ENO:= Z RTMWR_U (EN, Jn*, s1, s2, s3, s4, d); ENO:= Z RTMWR_U (EN, Un*, s1, s2, s3, s4, d);	indicates any of the following instructions. Z_RTMWR_J ZP_RTMWR_J Z_RTMWR_U ZP_RTMWR_U
Input argument	EN: Jn*:	Executing condition Network number of the target station (1 to 239, 254) 254: Network specified in "Valid module during other station access"	:Bit :String
	Un*:	Start I/O number of the host station network No. (00 to FE: Higher two digits when expressing the I/O number i three digits)	:String n
	s1: s2:	Channel used by host station (1 to 8) Target station number (1) Station number specification Host station is Universal model QCPU: 1 to 120 Host station is anything other than Universal model QCPU: 1 to 64 (2) Group specification 81H to A0H: All stations of a group (No.1 to 32) (3) All stations FFH: All stations of the target network No. (Except the host station) To specify a group or all stations, specify '0000H' or '03FFH' for the target station's CPU type (s3).	
	s3:	Target station's CPU type 0000H: Target station CPU/control CPU/host system CPU (Specified data are the same as '03FFH'.) 03E0H: Multi-CPU No. 1/ target station CPU (single CPU system) 03E1H: Multi-CPU No. 2 03E2H: Multi-CPU No. 3 03E3H: Multi-CPU No. 4 03FFH: Target station CPU/control CPU/host system CPU	:ANY16
Output argument	s4: ENO: d:	Variable that stores write clock data Execution result Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion.	:Array of ANY16 [04] :Bit :Array of bit [01]

Setting	Internal	l device	R, ZR	J	\	Constant	Others		
data *1	Bit	Word	, <u>L</u>	Bit	Word	U\G	K, H	Culoro	
(s1)	-	C)			-		0	-
s2	-	C)			_		0	-
\$3	-	C)			-		0	-
<u>s4</u>	-	C)			-		-	-
d	0	C)			_		-	-

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

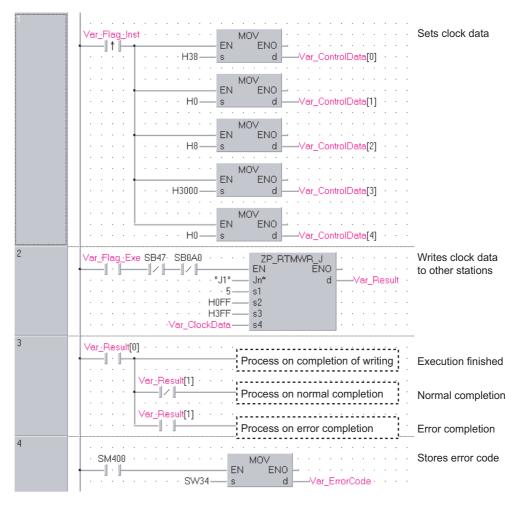
This instruction writes clock data to a CPU module on another station.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program writes the clock data (8:30:00) to all stations on the network number 1. [Structured ladder/FBD]



```
[ST]
IF (Var_Flag_Inst=TRUE) THEN
   MOV(TRUE,H38,Var_ClockData[0]); (* Sets clock data *)
   MOV(TRUE,H0,Var_ClockData[1]);
   MOV(TRUE,H8,Var ClockData[2]);
   MOV(TRUE,H3000,Var ClockData[3]);
   MOV(TRUE,H0,Var_ClockData[4]);
END IF;
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SB0A0=FALSE)) THEN
   ZP_RTMWR_J(TRUE,"J1",5,H0FF,H3FF,Var_ClockData,Var_Result);
                             (* Writes clock data to other stations*)
END IF;
IF(Var_Result[0]=TRUE)THEN (* Execution finished *)
       .....
    (* Process on completion of writing *)
                             /
   IF(Var_Result[1]=FALSE)THEN (* Normal completion *)
              .....
        (* Process on normal completion *)
                                 .....
   ELSE
                        (* Error completion *)
             .....
        (* Process on error completion *)
                               END IF;
END IF;
```

MOV(SM400, SW34, Var_ErrorCode);(* Stores error code *)

5.4.22 REMFR instruction

Z_REMFR

CC IE F NET/H

Z(P)_REMF	R				P: Executing condition :	
Structured EN Jn* n1	EMFR ENO d1 d2	-	NO:= Z REMF	ST	indicates any of the following instructions. Z_REMFR ZP_REMFR]
n2 n3 n4 n5						
land the second second		Evecutiv	an condition		-Dit	
Input argument	EN:		ng condition	aar (1 to 220)	:Bit	
	Jn*:			per (1 to 239)	:String	
	n1:		l number (1		:ANY16	
	n2:	•	tation numb		:ANY16	
	n3:			he target intelligent function		
				ield Network, the higher tw umber in three digits.		
		-	-	T/H, the higher three digits	when	
				umber in four digits.	WIGH	
	n4:		-	start address	:ANY16	
				dress of the buffer memory		
				t function module.		
	n5:			ts (1 to 240 words)	:ANY16	
Output argument	ENO:		on result	, , , , , , , , , , , , , , , , , , ,	:Bit	
	d1:	Start nu	mber of the	device that stores read data	(host station) :ANY16	
		Specifie	s the start n	umber of the host station's of	levice that	
		stores r	ead data.			
	d2:			N upon completion of the ir at the time of error completion		
		Setting	Interna	device R, ZR	JIII\III UIII\GIII Zn Constant	Ot
		data *1	Bit	Word	Bit Word K,H	
		n1	-	0	- 0	
		n2	-	0	- 0	
		n3	-	0	- 0	
		n4	-	0	- 0	
		n5	-	0	- 0	
			_	0		
		d1		0		_

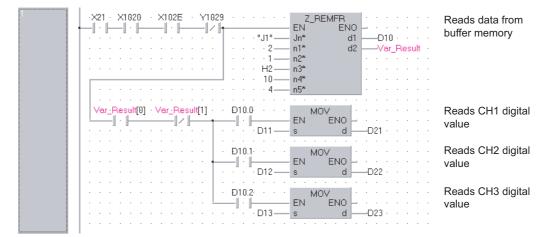
\overleftrightarrow Function

This instruction reads data from the buffer memory of an intelligent function module to the host station's word device (starting from (a)) on the intelligent device station/remote I/O station.

Program Example

The following program reads digital output values.

[Structured ladder/FBD]



[ST]

IF((X21=TRUE) AND (X1020=TRUE) AND (X102E=TRUE) AND (Y1029=FALSE))THEN Z_REMFR(TRUE,"J1",2,1,H2,10,4,D10,Var_Result); (* Reads data from buffer memory *) (*Reads digital values of CH1 to CH3 at once*) IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN IF(D10.0=TRUE)THEN MOV(TRUE,D11,D21); (* Reads CH1 digital output value *) END IF; IF(D10.1=TRUE)THEN MOV(TRUE,D12,D22); (* Reads CH2 digital output value *) END IF; IF(D10.2=TRUE)THEN MOV(TRUE,D13,D23); (* Reads CH3 digital output value *) END_IF; END_IF; END_IF;

5.4.23 REMTO instruction

Z_REMTO

CC IE F NET/H

Z(P)_REMT	0				P: Executing con	dition : 于	
Structured EN Jn* n1 n2 n3 n4 n5	EMTO ENO d1 d2	- -	ST <u>- REMTO</u> (EN, Jn*, n1, n2, n3, n4, n5, o	J1, d2);	instructions. Z_REMTO	es any of the following	
Input argument	EN: Jn*: n1: n2: n3:	Channel numb Target station Start I/O numb For the CC-Lir expressing the For the MELS	er of the host station (1 to er (1 to 32) number (1 to 120) er of the target intelligent f ik IE Field Network, the hig I/O number in three digits ECNET/H, the higher three	unction module her two digits wher	:Bit :String :ANY16 :ANY16 :ANY16		
	n4:	Write buffer m Specifies the s	 I/O number in four digits. emory start address tart address of the buffer n elligent function module. 	nemory for the write	:ANY16		
Output argument	n5: ENO: d1:	Execution rest Start number of	of the device that stores write the host state the host state the state of the host state the state of the host state of		:ANY16 :Bit ı) :ANY16		
	d2:	Variable that to	urns ON upon completion of of a completion of of a completion		:Array of bit [01]		
		* 4	nternal device R, ZR	Jiii\iii Bit	V\G	Zn Constant K, H C	Othe
		n1 ·	- 0		-	0	-
		n2 -	- 0		_	0	-
	_	-	- 0		_	0	-
	_		- 0		_	0	-
	-		- 0		_	0	-
	-		- 0		_	-	-
		d2 (e registers per program c	-	_

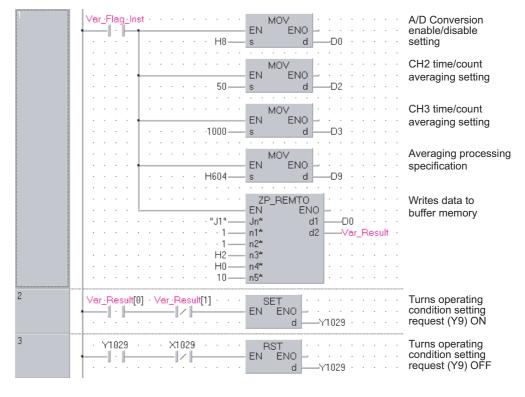
Grant Function

This instruction writes data to the buffer memory of an intelligent function module on the intelligent device station/remote I/O station.

Program Example

The following program makes the A/D conversion enable setting on channels.

[Structured ladder/FBD]



[ST]

IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE,H8,D0); (* A/D Conversion enable/disable setting *) MOV(TRUE,50,D2); (* CH2 time/count averaging setting *) MOV(TRUE, 1000, D3); (* CH3 time/count averaging setting *) MOV(TRUE,H604,D9); (* Averaging processing specification *) ZP REMTO(TRUE, "J1", 1, 1, H2, H0, 10, D0, Var Result); (* Writes data to buffer memory *) END IF; IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN SET(TRUE, Y1029); (* Turns operating condition setting request (Y9) ON *) END IF; IF((Y1029=TRUE) AND (X1029=FALSE))THEN RST(TRUE, Y1029); (* Turns operating condition setting request (Y9) OFF *) END_IF;

5.4.24 CCPASET instruction

G_CCPASET



G(P)_CCPAS	ΕT				P: Executing c	ondition : 于	
Structured law G_CCPAS EN Un* s1 s2 s3 s4		ENO:=G_CCP	ST ASET (EN, Un*, s1, s2, s3,	s4, d);	G_CCPASET	any of the following	
Input argument	Un*: S ((tř	Executing conditions Start I/O number of 200 to FE: Higher t Pree digits) Variable that store	of the module two digits when express	sing the I/O numbe	: Bit : ANY16 er in : Array of ANY16 [03	3]	
	C	onfiguration setti	-		 k : Array of ANY16 [05 ed : Array of ANY16 [07 	-	
	s4: S	tation specification Start number of the notation setter the setter the notation sette	e host station's device	that stores error	: Array of ANY16 [07	7]	
Output argument	ENO: E d: V	Execution result ariable that turns	ON upon completion of at the time of error cor		: Bit : Array of Bit [01]		
	Settir data	-	device R, ZR	J\	/ord U∏\G∏	Zn Constant Oth	hers
	(s1)	-	0		_		
	s2	-	0		_		
	\$3		0		_		
	64		0		_		
	d	0	0		e registers per program ca		

☆ Function

This instruction sets parameters for master/local module (master station).

Control Data

Device	Item	Setting data	Setting range	Setting side
st [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
্রা [1]	Setting flag	Specify the validity of setting data from (2) to (3) in the range from b0 to b2. '0: Invalid' is specified, default parameter is applied. The supplementary setting and the network operation setting in the range from b8 to bA. b15 ~ b11 b10 b9 b8 b7 ~ b3 b2 b1 b0 0 (Fixed) 0 (Fixed)	-	User
st) [2]	Total number of slave station	Specify the number of connected slave stations.	1 to 120	User
s1 [3]	Constant link scan time	Set the constant link scan time. 0 : No setting 5 to 2000: Constant link scan time	5 to 2000 (ms)	User

(1) Network configuration setting data

Set the network configuration settings when network configuration setting data (b0) is enabled in the setting flag (<a>[1]).

Device		Item	Setting data	Setting range	Setting side
⊚[0]	1st	Slave station setting information	Specify the station type and station number. b15 ~ b12 b11 ~ b8 b7 ~ b0 Station type 1 (Fixed) Station number 0 : Remote I/O station 1 : Remote device station 2 : Intelligent device station 3 : Local station	-	
s2[1]	130	RX/RY offset	Specify the start number of RX/RY in units of 16 points.	0 to 3FF0н	
© [2]		RX/RY size	Specify the number of RX/RY in units of 16 points.	0 to 2048	
s2 [3]		RWr/RWw offset	Specify the start number of RWr/RWw in units of 4 points.	0 to 1FFCн	
s2 [4]		RWr/RWw size	Specify the number of RWr/RWw in units of 4 points.	0 to 1024	User
© [5] to © [594]			• • • •		0301
⊚ [595]		Slave station setting information			
s2 [596]		RX/RY offset			
s2 [597]	120th	RX/RY size	The same as from @ [0] to @ [4].		
© [598]		RWr/RWw offset			
© [599]		RWr/RWw size			

(2) Reserved station specification data

Set the slave station as the reserved station when reserved station specification data (b1) is enabled in the setting flag (((1)).

Device	Item							S	ettir	ng d	ata								Setting side	<u> </u>
ෙ [0] to ල [7]	Reserved station specification	Specify the reserve 0: Not specified 1: Specified (3)[0] (3)[1] (3)[2] (3)[2] (3)[3] (3)[4] (3)[5] (5)[6]	(Defa 16 32 48 64 80 96	b14 15 31 47 63 79 95	b13 14 30 46 62 78 94	13 29 45 61 77 93	12 28 44 60 76 92	11 27 43 59 75 91	10 26 42 58 74 90	9 25 41 57 73 89	8 24 40 56 72 88	7 23 39 55 71 87	6 22 38 54 70 86	b4 5 21 37 53 69 85 101	4 20 36 52 68 84	3 19 35 51 67 83	b1 2 18 34 50 66 82 98	b0 1 17 333 49 65 81 97	User	
		\$3[7]	—	_	—	_	— Nı	umbe	ers ir	- the				117 e the						

(3) Error invalid station setting data

Set the slave station as the error invalid station when error invalid station setting data(b2) is enabled in the setting flag (s[1])

Device	Item								Set	ting	data	a							Setting side
ଔ [0] to ଔ [7]	Error invalid station setting ^{*1}	(4) (2) (3) (3) (4) (4) (5)	(Def b15 16 32 48 64 80	fault b14 15 31 47 63 79 95	b13 14 30 46 62 78 94	b12 13 29 45 61 77 93	12 28 44 60 76 92	11 27 43 59 75 91	10 26 42 58 74 90	9 25 41 57 73 89	8 24 40 56 72 88 104	7 23 39 55 71 87 103	6 22 38 54 70 86 102	5 21 37 53 69 85 101	4 20 36 52 68 84 100	3 19 35 51 67 83 99	2 18 34 50 66 82 98	b0 1 17 33 49 65 81 97 113	User
							N	umb	ers ir	n the	tabl	e inc	licat	e the	stat	ion r	numl	bers.	

*1: Reserved station specification has a priority when an error invalid station and reserved station are specified for the same station.

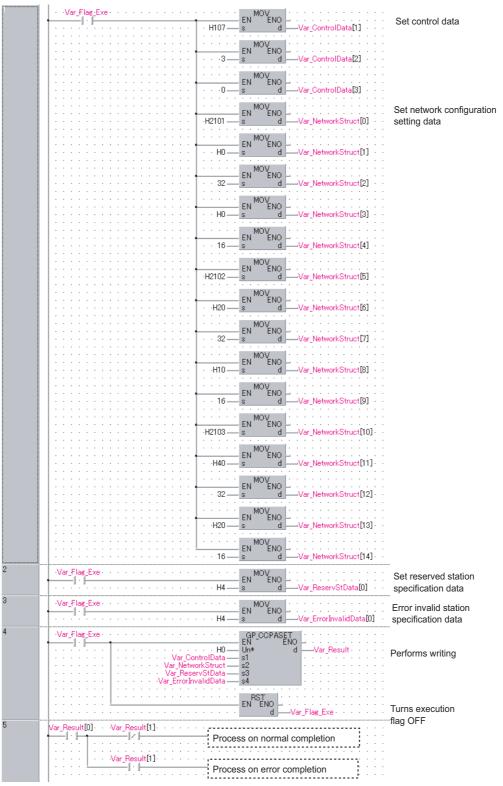
NODULE DEDICATED

Program Example

The following program sets parameters for master station of network No.1 when Var_Flag_Exe turns ON.

(Total number of slave stations is 3.)

[Structured ladder/FBD]



```
[ST]
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV(TRUE, H107, Var_ControlData[1]);
                                               (* Sets control data *)
    MOV( TRUE, 3, Var_ControlData[2]);
    MOV(TRUE, 0, Var ControlData[3]);
                                       (* Sets data of network configuration setting *)
    MOV( TRUE, H2101, Var_NetworkStruct[0] );
    MOV( TRUE, H0, Var NetworkStruct[1] );
    MOV( TRUE, 32, Var_NetworkStruct[2] );
    MOV( TRUE, H0, Var_NetworkStruct[3] );
    MOV(TRUE, 16, Var NetworkStruct[4]);
    MOV( TRUE, H2102, Var NetworkStruct[5] );
    MOV( TRUE, H20, Var_NetworkStruct[6 ] );
    MOV(TRUE, 32, Var NetworkStruct[7]);
    MOV( TRUE, H10, Var_NetworkStruct[8] );
    MOV( TRUE, 16, Var NetworkStruct[9] );
    MOV(TRUE, H2103, Var NetworkStruct[10]);
    MOV( TRUE, H40, Var_NetworkStruct[11] );
    MOV( TRUE, 32, Var_NetworkStruct[12] );
    MOV( TRUE, H20, Var_NetworkStruct[13] );
    MOV(TRUE, 16, Var NetworkStruct[14]);
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV( TRUE, H4, Var ReservStData[0] );
                                       (* Sets data of reserved station specification *)
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV(TRUE, H4, Var ErrorInvalidData[0]);
                                      (* Sets data of error invalid station setting *)
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    GP CCPASET(TRUE, H0, Var ControlData, Var NetworkStruct, Var ReservStData,
                      Var_ErrorInvalidData, Var_Result);
                                                                 (* Performs writing *)
    RST( TRUE, Var Flag Exe );
                                         (* Turns execution flag OFF *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                  (*Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
      (* Process on normal completion *)
    ELSE
                                   (* Error completion *)
       * Process on error completion *)
    END_IF;
```

END_IF;

CCPASET

5.4.25 OPEN instruction

Ether **ZP_OPEN** Executing condition : 1 indicates the following instruction. Structured ladder/FBD ST ZP_OPEN ZP_OPEN ΕN ENO ENO:= ZP_OPEN (EN, Un*, s1, s2, d); Un d s1 s2 Input argument :Bit EN: Executing condition Un*: Start I/O number of the module :String (00 to FE: Higher two digits when expressing the I/O number in three digits) :ANY16 s1: Connection number (1 to 16) s2: Variable that stores control data :Array of ANY16 [0..9] Output argument ENO: Execution result :Bit d: Variable that turns ON upon completion of the instruction :Array of bit [0..1] d[1] also turns ON at the time of error completion. Setting Internal device Constant R, ZR U...\G... Zn Others data *1 Word Bit Word Bi (s1) _ _ _ s2) _ _ _ _ (d) _ _ *1: Local devices and file registers per program cannot be used as setting data.

ZP_OPEN

Grant Function

This instruction establishes (opens) a connection with external device for data communication.

Control Data

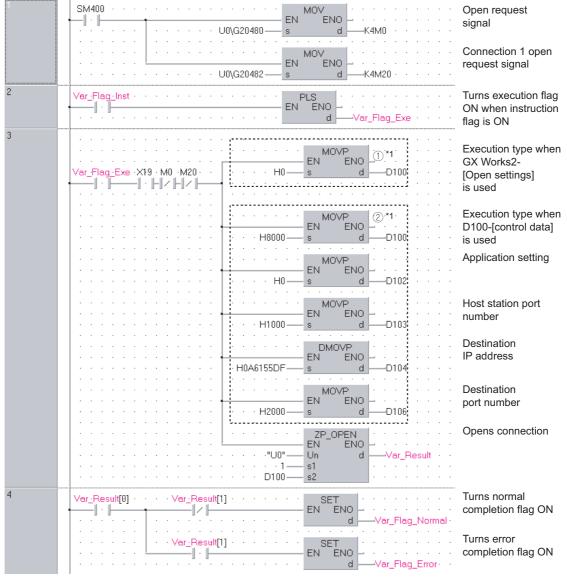
Device	Item	Setting data	Setting range	Setting side
© [0]	Execution type/ Completion type	Specify whether to use the parameter values set by GX Works2 or the setting values of the following control data ((a) [2] to (a) [9]) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2. 8000H: Uses the settings of control data (a) [2] to (a) [9].	0000н, 8000н	User
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
@[2]	Application setting area	Specify the application of connection. <u>bi5 bi4 bi3 bo bi0 b0 b8 b7 b6 bo b2 bi1 b0</u> <u>6</u> <u>0 5 d) 3 0 2 0 </u> <u>10 2 0 </u>	(See the left column.)	User
@[3]	Host station port No.	Specify the port number of the host station.	401н to 1387н, 138Вн to FFFEн	User
@ [4] @ [5]	Destination IP address	Specify the IP address of the external device.	1н to FFFFFFFн (FFFFFFFFн: broadcast)	User
@[6]	Destination port No.	Specify the port number of the external device.	401н to FFFFн (FFFFн: broadcast)	User
© [7] to © [9]	Destination Ethernet address	Specify the Ethernet address of the external device.	n 000000000000 FFFFFFFFFFF	User

Program Example

The following program opens the connection 1 for TCP/IP communication using the Active open process.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



*1:

For divisions of (1) and (2) in the program, (1) is necessary when the [Open settings] of GX Works2 is used and (2) is necessary when it is not used.

```
[ST]
IF(SM400=TRUE)THEN
                (* Always ON *)
    MOV(TRUE,U0\G20480,K4M0);
                (* Open completed signal/connection 1 open completion signal *)
    MOV(TRUE,U0\G20482,K4M20);
                (* Open request signal/connection 1 open request signal *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                                 (* When instruction flag is ON*)
    PLS(TRUE,Var_Flag_Exe);
                                 (* Turns execution flag ON *)
END IF;
IF((Var_Flag_Exe=TRUE) AND (X19=TRUE)
                            (* Execution flag/initialization normal completion signal *)
    AND (M0=FALSE) AND (M20=FALSE))THEN
          (* Connection 1 open completion signal/connection 1 open request signal *)
               (1)*1
            (*Use GX Works2-[Open settings]*)
    MOVP(TRUE,H0,D100);
            (*Execution type*)
            (2)*1
            (*Use D100-[control data]*)
    MOVP(TRUE, H8000, D100);
            (*Execution type*)
    MOVP(TRUE,H0,D102);
            (*Application setting*)
    MOVP(TRUE,H1000,D103);
            (*Host station port number*)
    DMOVP(TRUE,H0A6155DF,D104);
            (*Destination IP address*)
    MOVP(TRUE,H2000,D106);
            (*Destination port number*)
    ZP OPEN(TRUE,"U0",1,D100,Var Result); (* Opens connection *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                            (* Execution finished *)
     IF(Var Result[1]=FALSE)THEN
                                             (* Normal completion *)
                                            (* Turns normal completion flag ON *)
           SET(TRUE, Var_Flag_Normal);
    END IF;
    IF(Var_Result[1]=TRUE)THEN
                                            (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                            (* Turns error completion flag ON *)
    END IF;
END_IF;
```

*1: For divisions of ① and ② in the program, ① is necessary when the [Open settings] of GX Works2 is used and ② is necessary when it is not used.

5.4.26 CLOSE instruction

ZP_CLOSE

Ether

ZP_CLOSE							Executing condi	tion	: _	
Structured EN Un* s1 s2	Ladder/FE	-	NO:= ZP_CL	ST OSE (EN, Un*,	s1, s2, d);		ZP_CLOSE	tes the foll	owing instru	uction.
Input argument	EN: Un*:	Start I/O (00 to FE three dig	its)	o digits when e	expressing t	he I/O number i				
	s1:		on number				:ANY16			
Output argument	s2: ENO:	Executio	that stores on result	control data			:Array of ANY16 [01] :Bit	I		
Calparaigamon	d:	Variable	that turns O	N upon compl t the time of er			Array of bit [01]			
		Setting data ^{*1}	Internal Bit	device Word	R, ZR	J∭\∭ Bit V	V	Zn	Constant K, H	Others
		s1	-	0			_		0	_
		62	_	0			_		_	_
		() ()	0	0						_
		\odot	\bigcirc	0	*1:1.000	devices and file	e registers per program	cannot be		ting data

Grant Function

This instruction shuts off (closes) a connection with external device during data communication.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
		The instruction completion status is stored.		
s2[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Program Example

The following program closes the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	Var_Flag_Open Connection 1 Image: Description of the second se
2	Var_Flag_CloseTiming Var_Flag_OpenOK PLS Closing connection 1 Image: Close Timing Image: Close Timing Image: Close Timing Closing connection 1 Image: Close Timing Image: Close Timing Image: Close Timing Closing connection 1 Image: Close Timing Image: Close Timing Image: Close Timing Image: Close Timing Closing connection 1 Image: Close Timing Image: Close Timing Image: Close Timing Image: Close Timing Closing connection 1 Image: Close Timing Image: Close Timing Image: Close Timing Image: Close Timing Close Timing
3	Var_Flag_Inst PLS Image: Inst in the second secon
4	Var_Flag_Inst2 Var_Flag_Open ZP_CLOSE Closes connection Image: Strate St
	Var_Flag_Close Var_Flag_Exe SET Find Security flag ON flag ON
5	Var_Result[0] Var_Result[1] SET Turns normal Image: Set in the second seco
	Var_Result[1] SET Turns error completion flag ON
	EN EN d Var_Flag_Exe

[ST] (* Connection 1 open completion signal *) IF(Var_Flag_Open=TRUE)THEN PLF(TRUE,Var_Flag_CloseTiming); (* Connection 1 close timing *) END_IF; IF((Var Flag CloseTiming=TRUE) AND (Var Flag OpenOK=TRUE))THEN (* Connection 1 close timing/open instruction normal completion *) PLS(TRUE,Var_Flag_Close); (* Closing connection from external device *) END IF; IF(Var_Flag_Inst=TRUE)THEN (* Close instruction *) PLS(TRUE,Var_Flag_Inst2); (* Close instruction 1PLS *) END IF; IF(((Var_Flag_Inst2=TRUE) AND (Var_Flag_Open=TRUE)) (* Close instruction 1PLS/connection 1 open completion signal *) OR ((Var Flag Close=TRUE) AND (Var Flag Exe=FALSE)))THEN (* Closing connection 1 from external device/CLOSE instruction is in execution *) ZP CLOSE(TRUE,"U0",1,Var ControlData,Var Result); (* Closes connection *) SET(TRUE,Var_Flag_Exe); (* Turns execution flag ON *) END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal);(* Turns normal completion flag ON *) END_IF; IF(Var Result[1]=TRUE)THEN (* Error completion *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error); END IF; RST(TRUE, Var Flag Exe); (* Turns execution flag OFF *) END_IF;

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ZP_BUFRCV

5.4.27 BUFRCV instruction

								Eth	er
ZP_BUFRC	V					Executing conditi	on	: _	
Structured EN Un* s1 s2	BUFRCV ENO d1 d2		NO:= <u>ZP_BUF</u>	ST (EN, Un*, s1, s2, d1, d2);		ZP_BUFRCV	es the follo	owing instru	uction
Input argument	EN: Un*:	Start I/O	-	he module o digits when expressing th	ie I/O number i	:Bit :String n			
Output argument	s1: s2: ENO: d1: d2:	Connecti Variable Execution Start num Variable t	on number that stores n result nber of the that turns C	(1 to 16) control data device that stores read dat N upon completion of the at the time of error comple	instruction	:ANY16 :Array of ANY16 [01] :Bit :ANY16 :Array of bit [01]			
		Setting data ^{*1}	Interna Bit	l device R, ZR	J\	/ord	Zn	Constant K, H	Othe
		(s1)	-	0		_		0	-
		(s2)	-	0		-		-	-
		d1)	-	0		_		-	-
		d2	0	0		-		-	-

 * 1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in a main program. 5

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ZP_BUFRCV

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
		The instruction completion status is stored.		
s2 [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

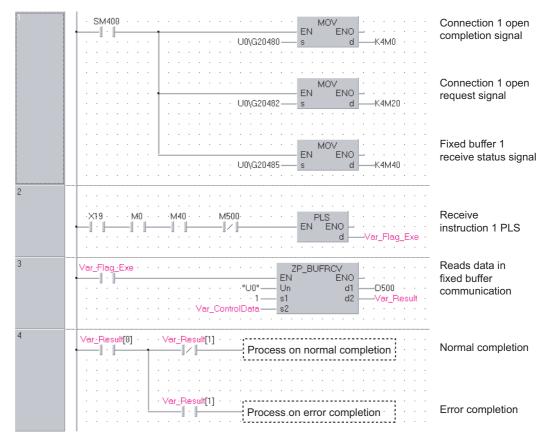
Device	Item	Setting data	Setting range	Setting side
@)+0	System area	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words	- 1 to 1017 1 to 508	System
		Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
@1+1 to @1+n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	-	System

Program Example

The following program reads out receive data from the fixed buffer of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



5

```
[ST]
IF(SM400=TRUE)THEN
                (* Always ON *)
    MOV(TRUE,U0\G20480,K4M0);
                (* Open completion signal/connection 1 open completion signal *)
    MOV(TRUE,U0\G20482,K4M20);
                (* Open request signal/connection 1 open request signal *)
    MOV(TRUE,U0\G20485,K4M40);
                (* Fixed buffer receive status signal/fixed buffer 1 receive status signal *)
END_IF;
(* Program to receive fixed buffer number 1 (main program) *)
IF((X19=TRUE) AND (M0=TRUE) AND (M40=TRUE) AND (M500=FALSE))THEN
    (* Initialization normal completion signal/connection 1 normal open completion signal *)
    (* Fixed buffer 1 receive status signal/receive instruction completion signal *)
    PLS(TRUE,Var_Flag_Exe);
                (* Receive instruction 1PLS *)
END IF;
IF(Var_Flag_Exe=TRUE)THEN
                (* Receive instruction 1PLS *)
    ZP_BUFRCV(TRUE,"U0",1,Var_ControlData,D500,Var_Result);
                (* Reads data in fixed buffer communication *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                       (* Execution finished *)
                                        (* Normal completion *)
    IF(Var_Result[1]=FALSE)THEN
             * Process on normal completion *)
                                       (* Error completion *)
    ELSE
                         (* Process on error completion *)
    END IF;
END IF;
```

5.4.28 BUFRCVS instruction

Z_BUFRCVS

Ether

Z_BUFRCVS

Structured EN Un* s	I ladder/FF		ST BUFRCVS (EN, Un*, s, d);	Z_BUFRCVS	es the following instruction
Input argument	EN: Un*:	Executing condition Start I/O number of (00 to FE: Higher to three digits)		:Bit :String I/O number in	
	s:	Connection number	er (1 to 16)	:ANY16	
Output argument	ENO:	Execution result		:Bit	
	d:	Start number of the	e device that stores read data	:ANY16	
		Setting Intern data ^{*1} Bit	al device R, ZR	J\G Bit Word U\G	Zn ^{Constant} K, H Othe
	1	(S) –	0	-	0 -

\checkmark Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in an interrupt program.

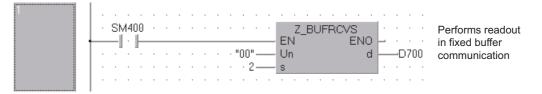
Device	Item	Setting data	Setting range	Setting side
(d) +0	.0 Receive data length	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words	- 1 to 1017 1 to 508	System
		Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
(d) +1 to (d) +n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	-	System

Program Example

The following program reads receive data from the fixed buffer of the connection 2.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



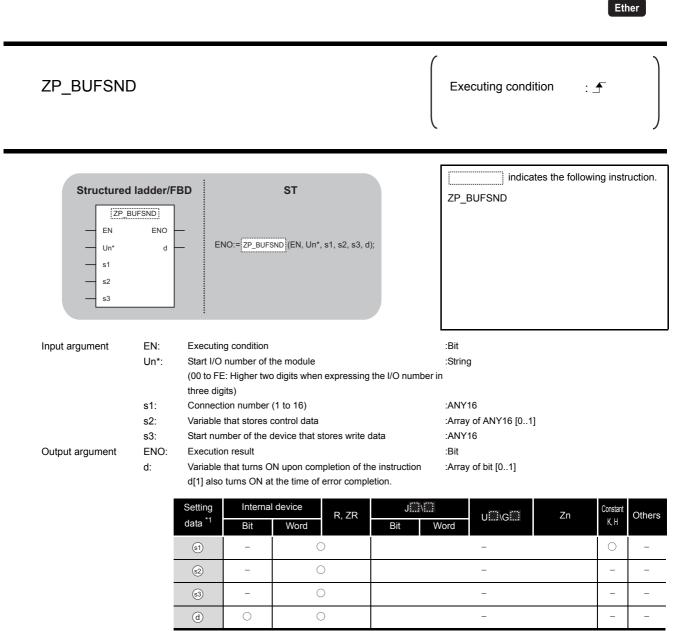


Z_BUFRCVS(SM400,"00",2,D700);(* Reads data in fixed buffer communication *)

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ZP_BUFSND

5.4.29 BUFSND instruction



*1: Local devices and file registers per program cannot be used as setting data.

This instruction sends data to external device in fixed buffer communication.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
		The instruction completion status is stored.		
<u>s</u> 2[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

(1) Send data

Device	Item	Setting data	Setting range	Setting side
s3 +0	Send data length	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words Nonprocedural communication (communication in binary code): The number of bytes	- 1 to 1017 1 to 508 1 to 2046	User
s3 +1 to s3 +n	Send data	Specify the send data.	-	User

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Program Example

The following program sends data from the fixed buffer of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	• · · X19 · · · Var_Flag_Open· · · · · · · · · · · · · · · · · · ·
	······································
2	Var_Flag.Inst Sets data length
	· · · · · · · · · · · · · · · · · ·
	MOV Sets send data
	$\begin{bmatrix} & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ & \cdot & \cdot & \cdot &$
	MOV
	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·
	ZP_BUFSND Sends data in EN ENO Fixed buffer
	Var_Result communication
	· · · · · · · · · · · · · · · · · · ·
3	Var_Result[0] · · · · Var_Result[1] · · · ·
	Process on normal completion Normal completion
	Ver_Result[1] Process on error completion

```
[ST]
IF((X19=TRUE) AND (Var_Flag_Open=TRUE))THEN
    (* Initialization normal completion signal/connection 1 open completion signal*)
    PLS(TRUE,Var_Flag_Inst);
                (* Send instruction 1PLS *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                (* Send instruction 1PLS *)
    MOV(TRUE,3,D300);
                (* Sets data length (number of words) *)
    MOV(TRUE,1234,D301);
                (* Sets send data *)
    MOV(TRUE,5678,D302);
                (* Sets send data *)
    MOV(TRUE,8901,D303);
                (* Sets send data *)
    ZP BUFSND(TRUE,"U0",1,Var ControlData,D300,Var Result);
                (* Sends data in fixed buffer communication *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                       (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                      (* Normal completion *)
                    (* Process on normal completion *)
    ELSE
                                       (* Error completion *)
                                     -----
           (* Process on error completion *)
    END_IF;
END_IF;
```

ZP_ERRCLR

Ether

5.4.30 ERRCLR instruction

Input argument EN:		Executing condition : _
Input argument	0 - ENO:= ZP_ERRCLR (EN, Un*, s, d);	······
Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number three digits)	:Bit :String er in
s: Output argument ENC d:	Variable that stores control data	:Array of ANY16 [07] :Bit :Array of bit [01]
	Setting data *1 Internal device R, ZR Jiii \iii Bit Word Bit Bit	Word UIII\GIII Zn Constant Othe
	0 0 0	

*1: Local devices and file registers per program cannot be used as setting data.

☆ Function

This instruction turns OFF the LED on Ethernet module and clears error information stored in the buffer memory.

5

Control Data

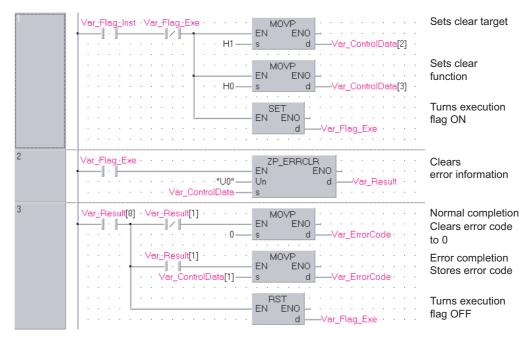
Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify the error information to be cleared.		
		0000∺: Initial error code		
		0001н to 0010н: Open error code of the corresponding		
	Clear target specification	connection	(See the left	
s[2]		0100н: Error log block area	column.)	User
		0101H: Communication status - Status by protocol	column.)	
		0102H: Communication status - E-mail reception status		
		0103H: Communication status - E-mail transmission status		
		FFFFH: Clears all of the above.		
		Specify the function to be cleared.		
() [2]	Clear function specification	0000H: [COM.ERR] LED is turned OFF and an error code is	0000н,	User
s [3]		cleared.	FFFFH	0001
		FFFFH: Error log clear		
§ [4]				
to	System area	_	-	-
S[7]				

Program Example

The following program clears the open error code of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



<pre>[ST] IF((Var_Flag_Inst=TRUE) AND (Var_Flag_Exe=F, MOVP(TRUE,H1,Var_ControlData[2]); MOVP(TRUE,H0,Var_ControlData[3]); SET(TRUE,Var_Flag_Exe);</pre>	
END_IF;	
IF(Var_Flag_Exe=TRUE)THEN	
ZP_ERRCLR(TRUE,"U0",Var_ControlData,\	/ar_Result);
	(* Clears error information *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
MOVP(TRUE,0,Var_ErrorCode);	(* Clears error code to 0 *)
END_IF;	
IF(Var_Result[1]=TRUE)THEN	(* Error completion *)
MOVP(TRUE,Var_ControlData[1],Var_	_ErrorCode);(* Stores error code *)
END_IF;	
RST(TRUE,Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

5.4.31 ERRRD instruction

ZP_ERRRD

Ether

ZP_ERRRD							Executing conditi	on :	
Structured EN Un* s	ERRRD ENO d	BD	ENO:= ZP	ST ERRRD (EN, U	n*, s, d);		ZP_ERRRD	es the follo	wing instruction.
Input argument	EN: Un*:	Start I/O (00 to FE three digi	its)	o digits when e	xpressing	the I/O number in			
Output argument	s: ENO: d:	Execution Variable t	n result that turns O	control data N upon compl t the time of er			:Array of ANY16 [07] :Bit :Array of bit [01]		
		Setting data ^{*1}	Interna Bit	device Word	R, ZR	J⊡∖∭ Bit W	/ord	Zn	Constant Others
	-	s d	-	0			-		
					*1: Loca	l devices and file	e registers per program o	annot be us	sed as setting data.



This instruction reads the error information stored in the buffer memory of the Ethernet module.

Control Data

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	-	-	-
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s [2]	Read information specification	Specify the error information to be read. 0 : Initial error code 1 to 16 : Open error code of the corresponding connection	0, 1 to 16	User
ঙ [3]	Read target information specification	Specify the target error information to be read. 0000H: Latest error information	0000н	User
\$[4]	Error information	The read error information is stored. 0000н : No error Other than 0000н : Error code	-	System
\$[5] to \$[7]	System area	-	-	-

Program Example

The following program reads the open error code of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	Var_Flag_Inst Var_Flag_Exe I ↑ I ↓ I ↑ I ↓ I ↑ I ↓ I ↑ I ↓ I ↑ I ↓ I ↓ I ↓ I	Sets open error code
	H0 - S d - Var_ControlData[3]	Sets latest error information
	EN ENO d Var_Flag_Exe	Turns execution flag ON
2	Var_Flag_Exe ZP_ERRD I EN ENO Un Un Var_Result Var_ControlData s	Reads error information
3	Var_Result[0] Var_Result[1] Var_ControlData[4] EN Var_Result[1] Var_ErrorInfo Var_Result[1] Var_ErrorCode	Normal completion Stores error information Error completion Stores error code
	RST EN ENO d	Turns execution flag OFF

```
[ST]
IF((Var_Flag_Inst=TRUE) AND (Var_Flag_Exe=FALSE))THEN
    MOVP(TRUE,H1,Var_ControlData[2]);
                (* Sets open error code of connection number 1 *)
    MOVP(TRUE,H0,Var_ControlData[3]);
                (* Sets latest error information *)
    SET(TRUE,Var_Flag_Exe);
                                  (* Turns execution flag ON*)
END IF;
IF(Var_Flag_Exe=TRUE)THEN
    ZP_ERRRD(TRUE,"00",Var_ControlData,Var_Result);
                                  (* Reads error information *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                  (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
          MOVP(TRUE,Var_ControlData[4],Var_ErrorInfo);
                                  (* Stores error information*)
    END IF;
    IF(Var_Result[1]=TRUE)THEN (* Error completion *)
          MOVP(TRUE,Var_ControlData[1],Var_ErrorCode);
                                  (* Stores error code *)
    END IF;
    RST(TRUE,Var_Flag_Exe);
                                  (* Turns execution flag OFF *)
END_IF;
```

5.4.32 UINI instruction

Z_UINI

							* CC IE C Ether *1: ZP_UINI instruction	
Z(P)_UINI						P: Executing co	ndition :	
Structured EN Un* s	UINI ENO - d -			ST u (EN, Un*, s, d);		instructions. Z_UINI	tes any of the following ZP_UINI	
Input argument	EN: Un*: s:	three digits) Variable that	nber of the gher two di stores con	gits when expressir	ng the I/O numbe	Array of ANY16 [09	1	
Output argument	ENO: d:	d[1] also turr	turns ON t ns ON at th Internal de	upon completion of e time of error com vice R, ZR Word		:Bit :Array of bit [01]	Zn Constant O	there
	- 1	(d)	0	0				

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

Ethernet: This instruction reinitializes the Ethernet module.

CC-Link IE Controller Network: For Universal model QCPU, this instruction sets the station number of the CC-Link IE Controller Network module on normal station (host station).

Control Data

(1) Ethernet

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	-
©[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
٤[2]	Modification specification	[When updating the address information of external devices which are held by the Ethernet module] • Specify '0H'.*1 [When modifying the host station IP address, operation settings, transmission speed, communication mode] • Specify the parameter to be modified. However, Modification specification of transmission speed, communication mode cannot be executed simultaneously with that of host station IP address, operation settings. If executed, only modification specification of host station IP address and operation settings will be set. <u>b15 b12b11 ~ 0 b2 b1 b0</u> <u>0 0 0 0 0 0 0 0 0 0 0 0 0 </u>	Он to 5000н	User
জ [3] জ [4]	Host station IP address	Specify the IP address of the host station.	00000001н to FFFFFFEн	User

Device	Item	Setting data	Setting range	Setting side
্ড [5]	Operation setting	b15 to b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 ① Communication data code setting ① 〕 <t< td=""><td>0 or 1</td><td>User</td></t<>	0 or 1	User
\$ [6] to \$ [9]	-	Specify 0.	0	User

*1 : The Ethernet module enables data exchange to restart by clearing the address information retained in the module and by performing re-initial processing.

(The Initial normal completion signal (X19) is on.)

(2) CC-link IE Controller Network

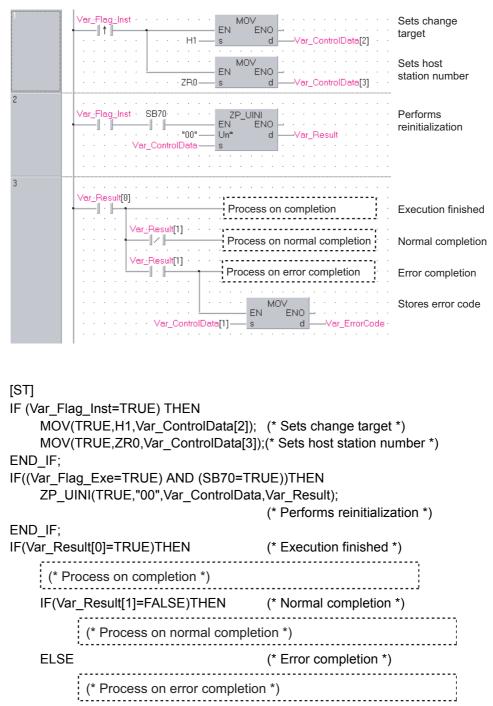
Device	Item	Setting data	Setting range	Setting side
s [0]	-	Specify 0.	0	User
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
<u>ি</u> [2]	Modification specification	Specify the change target 0001н: With station number setting	0001н	User
ঙ [3]	Host station No.	Specify the station number of the host station.	1 to 120	User
\$[4] to \$[9]	-	Specify 0.	0	User

The UINI instruction can be executed only once. The UINI instruction cannot be executed again after determination of station number. (It caused an error completion.)

However, in the case of the UINI instruction with the error completion, execute the UINI instruction again after taking corrective action.

Program Example

The following program sets the station number 2. The following is an example for Ethernet. [Structured ladder/FBD]



MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END_IF;

END_IF;

ZP_MRECV

Ether

5

E DEDICATED

ZP_MRECV

5.4.33 MRECV instruction

					Ether
ZP_MRECV					Executing condition :
	MRECV ENO d1 d2		ST (EN, Un*, s, d1, d2);	ZP_MRECV
Input argument	Un*: 9	Executing conditi Start I/O number (00 to FE: Higher three digits)		the I/O number	:Bit :String in
Output argument	s: N ENO: E d1: S d2: N	Variable that store Execution result Start number of the content of the rec Variable that turn	es control data ne host station's device tha eived e-mail (header + atta s ON upon completion of th N at the time of error com	ached file) ne instruction	:Array of ANY16 [015] :Bit :ANY16 :Array of bit [01]
	d	etting Inter ata ^{*1} Bit s –	Thal device R, ZR	J\ Bit V	UIIIIGIII Zn Constant Oth
		(d) -	0		
				al devices and fil	e registers per program cannot be used as setting

Grant Function

This instruction reads received e-mail.

E Control Data

Device	lte	em	Setting data	Setting range	Setting side
© [0]	Execution/Error completion type		b15 to b10 b9 b8 b7 to b0 0 2 0 ① 0 0 ① Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from ⑤[11]. 1: Clock data at the time of error completion is set in the area starting from ⑥[11]. 2: Execution type (bit 9) *1 Specify whether to inquire about existence of mails in the server after reading received mails. 0: Not requested (not read) 1: Requested (read)	0000н, 0080н, 0200н, 0280н	User
ঙ[1]	Completion st	atus	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ [2]	E-mail No. to	be read	Specify the number of a mail to be read when multiple mails are received. 0 : First mail 1 or more : Specified mail	0 or more	User
⑤ [3] to ⑤ [8]	System area		_	-	-
(٤)		instruction	Specify the data length (header + attached file) of the mail that can be stored in (a) to (a) +n. (Header: 1 to 373, attached file: 1 to 6144) 0 : Adjust data length to that of the received mail. 1 to 6517 : The number of data that can be stored in (a) to (a) + n)	0 to 6517 (word) * Includes the header length	User
			At instruction stored.	Data length (header + attached file) of the mail stored in (d) to (d) + n is stored. 1 to 6517: The number of receive data stored in (d) to (d) + n)	explained below.
জ [10]	Header length	For instruction execution	Specify the header data length of the mail that can be stored in (1) to (1) + n. 0 : Adjust header data length to that of the received mail. 1 to 373 : The number of data that can be stored in ((1) to (1) + n)	0 to 373 (word)	User
		At instruction completion	Header data length of the mail stored in (a) to (a) + n is stored. 1 to 373: Number of receive data stored in ((a) to (a) + n)		System
<u></u> জ[11]	Clock set flag		Valid/invalid status of the data in the area starting from (s) [12] is stored. 0: Invalid 1: Valid	0,1	System

Device	Item	Setting data	Setting range	Setting side
(\$)[12] to (\$)[15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (s) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (s) [13] Hour (00H to 23H) Day (01H to 31H) b1 (s) [14] Second (00H to 59H) Minute (00H to 59H) b1 (s) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) 00H (Sun.) to 06H (Sat.)	-	System

Devi	ce Item	Setting data	Setting range	Setting side
d1 +	0			
to	Receive data	Content (header + attached file) of the received mail are stored.	-	System
d1 +	n			

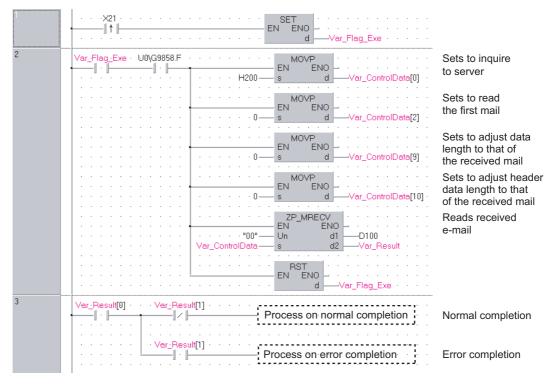
*1: The following table shows the processing that depends on the selection of the execution type after executing the MRECV instruction.

Setting option	Processing	Advantage	Disadvantage
No request (not read)	 Only e-mail read processing from the mail server is performed. Inquiry (reading) for the information of received mails remaining in the mail server is performed after the time set in the GX Works2 parameter has elapsed. 	Unnecessary read processing is not performed when the mail server has no mail.	Even if mails remain in the mail server, they cannot be read immediately. Mails tend to be accumulated in the mail server.
Request (read)	 E-mail read processing from the mail server is performed. After the execution of the MRECV instruction, inquiry (read) processing for information on the received mails remaining in the mail server is performed. (Inquiry for receiving of a mail is made immediately.) 	Received mails stored in the mail server can be read in series.	Inquiries to the mail server are made more often. Internal processing of the module increases, which affects other internal processing to a certain degree.

Program Example

The following program performs the e-mail receiving process by the receive instruction (X21). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



```
[ST]
IF (X21=TRUE) THEN
    SET(TRUE,Var_Flag_Exe);
END_IF;
IF((Var_Flag_Exe=TRUE) AND (U0\G9858.F=TRUE))THEN
    MOVP(TRUE,H200,Var ControlData[0]);
                (* Sets to inquire to server *)
    MOVP(TRUE,0,Var_ControlData[2]);
                (* Sets to read the first mail *)
    MOVP(TRUE,0,Var_ControlData[9]);
                (* Sets to adjust data length to that of the received mail *)
    MOVP(TRUE,0,Var_ControlData[10]);
                (* Sets to adjust header data length to that of the received mail *)
    ZP_MRECV(TRUE,"00",Var_ControlData,D100,Var_Result);
                (* Reads received e-mail *)
    RST(TRUE,Var_Flag_Exe);
END IF;
IF(Var_Result[0]=TRUE)THEN
                                        (* Execution finished *)
     IF(Var_Result[1]=FALSE)THEN
                                        (* Normal completion *)
              Process on normal completion *)
                                        (* Error completion *)
    ELSE
              Process on error completion *)
    END IF;
END_IF;
```

5.4.34 MSEND instruction

ZP_MSEND

Ether

				Executing condition	on : <u></u>	ſ
		ST ND (EN, Un*, s1, s2, d);		ZP_MSEND	s the followi	ng instruction.
Un*: s1: s2:	(00 to FE: Higher two of three digits) Variable that stores co Start number of the ho content of the sent e-m	ligits when expressing th ntrol data st station's device that s	tores the	:Array of ANY16 [015] :ANY16		
ENO: d:	Execution result Variable that turns ON			:Bit :Array of bit [01]		
	data I Bit ©1 - - ©2 - -	Word R, ZR	JVIII Bit V	Vord UIII\GIII	Zn	Constant Others
	ENC ENC ENC ENC d d	ENO d ENC:= ZP_MSE ENC:= ZP_MSE ENC:= ZP_MSE ENC:= ZP_MSE ENC:= ZP_MSE (00 to FE: Higher two of three digits) s1: Variable that stores co s2: Start number of the ho content of the sent e-n text) ENC: Execution result d: Variable that turns ON d[1] also turns ON at the s1 = <u>Setting</u> Internal of <u>Bit</u> s2 = <u>-</u> s2 = <u>-</u>	END ENO:= ZP_MSEND (EN, Un*, s1, s2, d); EN: Executing condition Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the three digits) s1: Variable that stores control data s2: Start number of the host station's device that si content of the sent e-mail (subject + attached fi text) ENO: Execution result d: Variable that turns ON upon completion of the d[1] also turns ON at the time of error completion of the dist at a 1 s1: Setting Internal device R, ZR s2: - - - s2: - - - s2: Start number of the Nost station's device that si content of the sent e-mail (subject + attached fi text) - ENO: Execution result - - d: Variable that turns ON upon completion of the d[1] also turns ON at the time of error completion of setting - s2: - - - s2: - - - g3: - - - g3: - - - g3: - - - <	ENO ENO:= ZP_MSEND (EN, Un*, s1, s2, d); EN: Executing condition Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number i three digits) s1: Variable that stores control data s2: Start number of the host station's device that stores the content of the sent e-mail (subject + attached file) or (subject text) ENO: Execution result d: Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion. Setting Internal device R, ZR g: - - g: - -	Iadder/FBD ST Image: Note of the sent of the module in three digits) ENC: = ZP_MSEND (EN, Un*, s1, s2, d); ZP_MSEND EN: Executing condition :Bit Un*: Start I/O number of the module in three digits) :String s1: Variable that stores control data :Array of ANY16 [015] s2: Start number of the host station's device that stores the content of the sent e-mail (subject + attached file) or (subject + text) ENC: ENC: Execution result :Bit d: Variable that turns ON upon completion of the instruction in three of the instruction in three of the instruction. Mathematical device R, ZR Jii Word g: - - @ - - @ - -	Iddder/FBD ST ZP_MSEND IND:= ZP_MSEND (EN, Un*, s1, s2, d); ZP_MSEND EN: Executing condition :Bit Un*: Start I/O number of the module :String (00 to FE: Higher two digits when expressing the I/O number in three digits) :Array of ANY16 [015] s1: Variable that stores control data :Array of ANY16 [015] s2: Start number of the host station's device that stores the content of the sent e-mail (subject + attached file) or (subject + text) :Bit ENC: Execution result :Bit d: Variable that turns ON upon completion of the instruction :Array of bit [01] d[1] also turns ON at the time of error completion. :Array of bit [01] d: Yariable that turns ON upon completion of the instruction :Array of bit [01] d: Variable that turns ON upon completion. :Array of bit [01] d:1) also turns ON at the time of error completion. :Array of bit [01] d:1) also turns ON at the time of error completion. :Array of bit [01] d:1) also turns ON at the time of error completion. :Array of bit [01] d:1) also turns ON at the time of error completion. :Array of an

Grant Function

This instruction sends an e-mail.

Control Data

Device	Item	Setting data	Setting range	Setting side
st [0]	Execution/Error completion type Send data format	b15 to b12 to b8 b7 to b0 0 2 1 0 1 Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from (a) [11]. 1: Clock data at the time of error completion is set in the area starting from (a) [11]. 1: Clock data format (bit 12 to bit 8) Specify the data format of the send data. (Sending the data as an attached file) 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 Binary data 1	(See the left column.)	User
s1[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙা [2]	Transmission destination No.	Specify the external device to which e-mails are to be sent by the setting number on [Send mail address setting] of GX Works2. 1 to 16: Setting number of the external device	1 to 16	User
st [3] to st [8]	System area	_	-	-
্রা [9]	Send data length	 Specify the data length ((subject + attached file) or (subject + text)) of the mail stored in ⁽²⁾ to ⁽²⁾ + n. ① Sending the data as an attached file (subject: 0 to 373, attached file: 1 to 6144) 1 to 6517: Data length (word) of a mail ② Sending the data as a text (subject: 0 to 373, text: 1 to 960) 1 to 1333: Data length (word) of a mail 	1 to 6517, 1 to 1333	User
s1 [10]	Subject length	Specify the subject data length of the mail stored in (2) to (2) + n. 0 to 373: Data length (word) of subject	0 to 373	User

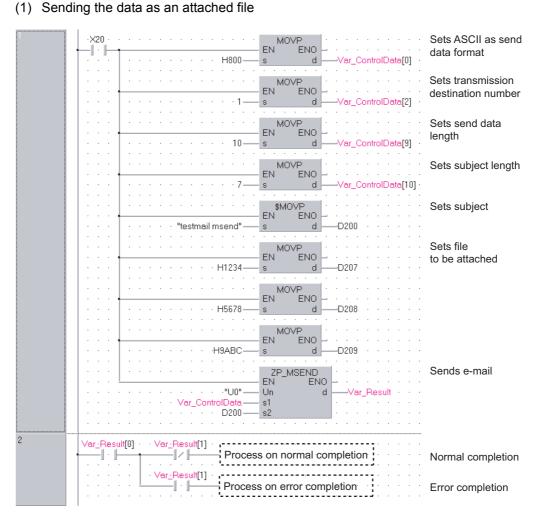
Device	Item	Setting data	Setting range	Setting side
s1)[11]	Clock set flag	Valid/invalid status of the data in the area starting from (a) [12] is stored. 0: Invalid 1: Valid	_	System
জ [12] to জ [15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (s1) [12] Month (01H to 12H) Year (00H to 99H) Last two digits (s1) [13] Hour (00H to 23H) Day (01H to 31H) (s1) [14] Second (00H to 59H) Minute (00H to 59H) (s1) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) (s1) [15] Year (00H to 99H) First two digits Day of week (00H to 06H)	_	System

(1) Send data

Device	Item	Setting data	Setting range	Setting side
© +0 to ⊚ +n	Send data	Specify the content of ((subject + attached file) or (Subject + text)) of a mail to be sent.	_	User

Program Example

The following program performs e-mail sending process by the send instruction (X20). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)



```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H800,Var_ControlData[0]);
                             (* Sets ASCII as send data format *)
    MOVP(TRUE,1,Var_ControlData[2]);
                             (* Sets transmission destination number *)
    MOVP(TRUE,10,Var_ControlData[9]);
                             (* Sets send data length *)
    MOVP(TRUE,7,Var_ControlData[10]);
                             (* Sets subject length *)
    Int_Msg[0] := H6574;
                             (* te *)
    Int_Msg[1] := H7473;
                             (* st *)
    Int_Msg[2] := H616d;
                             (* ma *)
    Int_Msg[3] := H6c69;
                             (* il *)
    Int_Msg[4] := H6d20;
                             (* m *)
    Int Msg[5] := H6573;
                             (* se *)
    Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    MOVP(TRUE,H1234,Int_Msg[7]);
                             (* Sets file to be attached *)
    MOVP(TRUE,H5678,Int_Msg[8]);
    MOVP(TRUE,H9ABC,Int_Msg[9]);
    ZP_MSEND(TRUE,"U0", Var_ControlData, Int_Msg[0], Var_Result);
                             (* Sends e-mail *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                   (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
               Process on normal completion *)
    ELSE
                                   (* Error completion *)
              Process on error completion *)
    END IF;
```

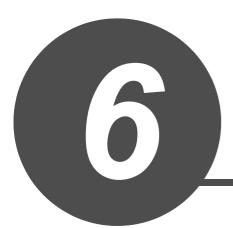
END_IF;

(2) Sending the data as a text [Structured ladder/FBD]

1	·X20 ····· ENOVP ····· ENO ····· ENO ····· H1000 s d	Sets text as send data format
	ENO 	Sets transmission destination number
	EN ENO 	Sets send data length
		Sets subject length
	**************************************	Sets subject
	\$MOVP EN EN EN Stror Machine 1 001" — s d — D207	Sets text
	s d —D207 ZP_MSEND EN ENO	Sends e-mail
	····································	
2	Var_Result[0] Var_Result[1] Process on normal completion	Normal completion
	Var_Result[1] Process on error completion	Error completion

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H1000,Var_ControlData[0]);
                 (* Sets text as send data format *)
    MOVP(TRUE,1,Var ControlData[2]);
                 (* Sets transmission destination number *)
    MOVP(TRUE,16,Var_ControlData[9]);
                 (* Sets send data length *)
    MOVP(TRUE,7,Var_ControlData[10]);
                 (* Sets subject length *)
    Int_Msg[0] := H6574;
                             (* te *)
    Int_Msg[1] := H7473;
                             (* st *)
    Int_Msg[2] := H616d;
                             (* ma *)
                             (* il *)
    Int_Msg[3] := H6c69;
    Int_Msg[4] := H6d20;
                             (* m *)
    Int Msg[5] := H6573;
                             (* se *)
     Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    Int_Msg[7] := H7274;
                             (* Er *)
     Int_Msg[8] := H6f72;
                             (* ro *)
    Int_Msg[9] := H2072;
                             (* r *)
    Int_Msg[10] := H614d;
                             (* Ma *)
     Int_Msg[11] := H6863;
                             (* ch *)
    Int_Msg[12] := H6e69;
                             (* in *)
    Int_Msg[13] := H3165;
                             (* e1 *)
     Int Msg[14] := H3020;
                             (* 0 *)
    Int_Msg[15] := H3130;
                             (* 01 *)
                             (* Sets text *)
    ZP_MSEND(TRUE,"U0", Var_ControlData, Int_Msg[0], Var_Result);
                             (* Sends e-mail *)
END IF;
IF(Var_Result[0]=TRUE)THEN
                                    (* Execution finished *)
     IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
              Process on normal completion *)
    ELSE
                                    (* Error completion *)
                                       Process on error completion *)
    END IF;
END_IF;
```

MEMO



PID CONTROL INSTRUCTION

6.1	PID Control Instruction (Inexact Differential)	6-2
6.2	PID Control Instruction (Exact Differential)	5-16

1

6.1 PID Control Instruction (Inexact Differential)

6.1.1 PIDINIT instruction

S_PIDINIT

S(P)_PIDINI	Т	P: Executing condition :
Structured I		indicates any of the following instructions. S_PIDINIT SP_PIDINIT
Input argument Output argument	EN: Executing condition s: Start number of the device that stores PID condition ENO: Execution result Setting data Internal device Bit Word S -	Bit Bit Bit Bit Word U∭\G∭ Zn Constant Others

Function

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting	range	Setting	Processing when the		
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range		
Common setti	ng data (device: 💿 +	0 to (s) +1)						
s +0	Number of loops	Set the number of loops for PID operation.	1 tc	32	User			
ঙি +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.	1 tc	0 32	User	An error occurs and the PID operation for all loops is not performed.		
Setting data for	or No. 1 loop (device:	s +2 to s +15)						
s) +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User			
s +3	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User			
s) +4	Proportional constant (K _P)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User			
٤) +5	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Tı = Infinite (∞)	User	An error occurs and the PID operation for the corresponding loop is not		
s +6	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant change in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	performed.		
s) +7	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User			

*1 : For the PID operational expressions to be set for Operational expression selection, refer to MELSEC-Q/L/ QnA Programming Manual (PID Control Instructions).

			Setting	g range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the MVLL or MVHL is
্ড +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 I the MVLL of MV1L is less than -50, the value is clipped to -50. If the MVLL or MVHL is greater than 2050, the value is clipped to 2050.
ঙ +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
্জ +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the △ PVL value is less than 0, the value is clipped to 0. • If the △ PVL value is greater than 2000, the value is clipped to 2000.

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +12	(Fixed value)	-	0	0	User	-
ঙ +13	Derivative gain (Kɒ)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential. Ideal value KD = 8.00	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	User	An error occurs and the PID operation for the corresponding loop is not performed.
s +14	(Fixed value)	_	0	0	User	_
ঙ +15	(Fixed value)	-	0	0	User	-

Setting data for No. 2 loop (device: (s) +16 to (s) +29)

	Operational	
s +16	expression	
	selection	
0 147	Sampling cycle	
s +17	(Ts)	
	Proportional	
s +18	constant	
	(KP)	
	Integral	
s +19	constant	
	(Tı)	
	Derivative	
s +20	constant	
	(TD)	
s +21	Filter coefficient	
U +21	(α)	The same as Setting data for No. 1 loop
s) +22	MV lower limit	The same as Setting data for No. 1 loop
0 122	(MVLL)	
s) +23	MV upper limit	
3 +23	(MVHL)	
	MV change rate	
s +24	limit	
	($ riangle$ MVL)	
	PV change rate	
s +25	limit	
	($ riangle$ PVL)	
s +26	(Fixed value)	
0.107	Derivative gain	
s +27	(KD)	
ঙ +28	(Fixed value)	
s +29	(Fixed value)	

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
Setting data fo	r No. n loop					
	Operational					
s +(m+0)	expression					
	selection					
s +(m+1)	Sampling cycle					
(III+I)	(Ts)					
	Proportional					
s +(m+2)	constant					
	(KP)					
	Integral					
s +(m+3)	constant					
	(Tı)					
	Derivative					
s +(m+4)	constant					
	(TD)					
s +(m+5)	Filter coefficient					
(III-3)	(α)	The same as Setting data	for No. 1 loop			
s +(m+6)	MV lower limit	····· ································				
(iii:0)	(MVLL)					
(\$) +(m+7)	MV upper limit					
(iii.7)	(MVHL)					
	MV change rate					
s +(m+8)	limit					
	(
	PV change rate					
s +(m+9)	limit					
	($ riangle$ PVL)					
s +(m+10)	(Fixed value)					
	Derivative gain					
s +(m+11)	(Kd)					
s +(m+12)	(Fixed value)					
s +(m+13)	(Fixed value)					

m=(n-1)×14+2 n: number of loops

Precautions

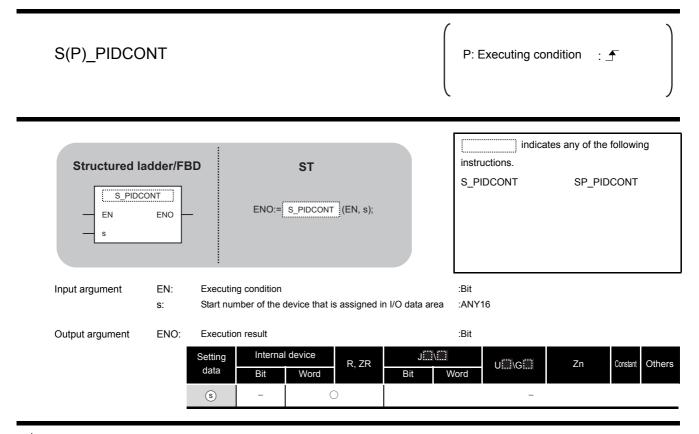
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU		0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, X: Not applicable

6.1.2 PIDCONT instruction

S_PIDCONT



Grant Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by s or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

Device	Data na	ame	Description	Setting With PID limits	range Without PID limits	Setting side	Processing when the setting data are outside the setting range
(s) +0	Initial processing flag		Processing method at the start of PID operation	used is ba in one sca Other than 0: F for the nu	f loops to be tch-processed an. PID operation mber of loops d is processed	User	-
(\$) +1 to (\$) +9	()	PID control reserved by	work area the system)	-	-	-	-
I/O data area f	or No. 1 loop (de	vice: (s) +10	to (s) +27)				
s) +10	Set value	SV	• PID control target value	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If SV is less than 0, the value is clipped to 0. • If SV is greater than 2000, the value is clipped to 2000.
s) +11	Process value	ΡV	 Feedback data from the control target to the A/D conversion module 	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to -50. • If PV is greater than 2050, the value is clipped to 2050.
s) +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	-
s) +13	Process value after filtering	PVf	Process value obtained by calculation using operational	-50 to 2050	-32768 to 32767	System	-

clipped to 2050. *1 : For Process value after filtering (PVf), the value calculated based on the process value of input data are stored.

-50 to 2050

For the operational expression, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

-32768 to

32767

User

In the case of "With PID limits", the PID operation is performed after values are

• If MVMAN is less than

• If MVMAN is greater than 2050, the value is

-50, the value is clipped

replaced as follows:

to -50.

operational expression. *1

Store the data output

conversion module in

manual operation.

from the D/A

s +14

Manual

manipulated

value

MVman

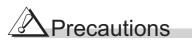
Device	Data name	9	Description	Setting With PID limits	g range Without PID limits	Setting side	Processing when the setting data are outside the setting range
ঙ +15	automatic	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	value	tic manipulated manipulated	User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.
s +16	Alarm Al	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 	is i 	f PV variation s outside the mit range, l' is set. f MV variation s outside the mit range, l' is set.	User System	_
(\$) +17 to (\$) +32	PID control work area (reserved by the system)			-	_	-	

I/O data area for No. 2 loop (device: (s) +28 to (s) +45)

I/O data area to	or No. 2 loop (de	evice: (s) +2	28 to (s) +45)							
s +33	Set value	SV								
s +34	Process value	PV								
জ +35	Automatic manipulated value	MV								
s) +36	Process value after filtering	PVf	The same as I/O data area for No. 1 loop							
s) +37	Manual manipulated value	MVman								
\$ +38	Manual/ automatic selection	MAN/ AUTO								
s +39	Alarm	ALARM								
 (\$) +40 to (\$) +55 			y the system)							

				Setting	range	Setting	Processing when the	
Device	Data r	name	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
I/O data area fo	or No. n loop							
s +(m+0)	Set value	SV						
s +(m+1)	Process value	PV						
s +(m+2)	Automatic manipulated value	MV		The same as I/O data area for No. 1 loop				
s +(m+3)	Process value after filtering	PVf	The same as I/O data ar					
s +(m+4)	Manual manipulated value	MVman						
s +(m+5)	Manual/ automatic selection	MAN/ AUTO						
s +(m+6)	Alarm	ALARM						
 s +(m+7) to s +(m+22) 			trol work area by the system)	_	-	_	-	

m=(n-1) \times 23+10 n: number of loops



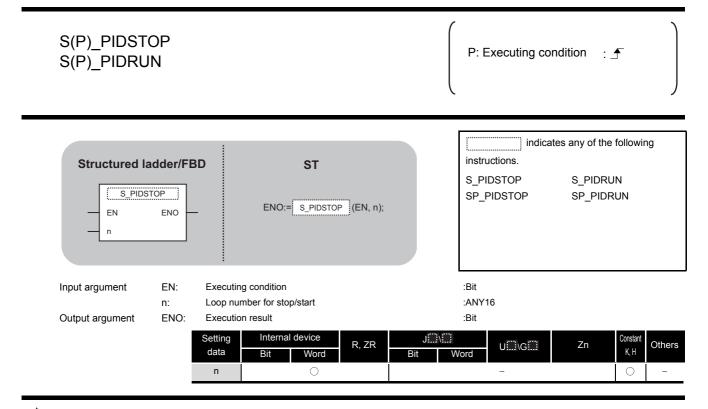
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU		0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \leftthreetimes : Not applicable

6.1.3 PIDSTOP instruction and PIDRUN instruction

S_PIDSTOP, S_PIDRUN



Function

(1) S(P)_PIDSTOP

This instruction stops the PID operation for the loop number specified by 'n'.

(2) S(P)_PIDRUN

This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
	The first five digits of the serial number are '04121' or lower.	×	×
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU	•	0	0
Universal model QCPU		0	0
LCPU		0	0
		: Applicabl	e, $ imes$: Not applicable

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6.1.3 PIDSTOP instruction and PIDRUN instruction

6.1.4 PIDPRMW instruction

S_PIDPRMW

S(P)_PIDPR	RMW				P: Executing con	dition :	ſ	
Structured I S.PIDP EN n s			ST S_PIDPRMW (EN, n, s)	;	indicate instructions. S_PIDPRMW	es any of the	e followin DPRMW	g
Input argument	EN: n: s:	Executing condition Loop number to be ch Start number of the de changed	•	ntrol data to be	:Bit :ANY16 :ANY16			
Output argument	ENO:	Execution result Setting data	Word R, ZR	J\ Bit W	:Bit /ord - -	Zn	Constant K, H —	Others _ _

☆ Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by \$.

(1) PID control data

			Setting	Setting range		Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
জ +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not
s +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	range	Catting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range	
ঙি +2	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User		
s +3	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 TI = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Tı = Infinite (∞)	User		
(s) +4	Derivative constant (T⊳)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s) +5	Filter coefficient	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		
s +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is less than -50, the value is clipped to -50. • If MVLL or MVHL value is greater than 2050, the value is clipped to 2050.	
s +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User		

S_PIDPRMW

Device	Data item	Description	Setting range		Setting	Processing when the
			With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
s) +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the △ PVL value is less than 0, the value is clipped to 0. • If the △ PVL value is greater than 2000, the value is clipped to 2000.
s +10	(Fixed value)	_	0	0	User	-
ঙ +11	Derivative gain (KD)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential. Ideal value K _D = 8.00	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\cos)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	User	An error occurs and the PID operation for the corresponding loop is not performed.
\$ +12	(Fixed value)	-	0	0	User	-
s +13	(Fixed value)	-	0	0	User	-

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU	0	0	
Universal model QCPU	0	0	
LCPU	0	0	

 \bigcirc : Applicable, \times : Not applicable

6.2 PID Control Instruction (Exact Differential)

6.2.1 PIDINIT instruction

PIDINIT

PIDINIT(P)		P: Executing condition :
Structured I		indicates any of the following instructions. PIDINIT PIDINITP
Input argument Output argument	EN: Executing condition s: Start number of the device that stores PID control ENO: Execution result Setting data Internal device Bit Word s: -	Bit Sit Sit Sit Sit Sit Sit Sit Sit Sit S

Function

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
Common sett	ing data (device: জ+	0 to (s) +1)		•		
s +0	Number of loops	Set the number of loops for PID operation.	1 tc	32	User	
ঙ +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.	1 to 32		User	An error occurs and the PID operation for all loops is not performed.
Setting data f	or No. 1 loop (device:	s +2 to s +11)				
s +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	
\$ +3	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	
s) +4	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	
® +5	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 TI = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	User	An error occurs and the PID operation for the
s +6	Derivative constant (TD)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	corresponding loop is not performed.
s) +7	Filter coefficient	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User	

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	g range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is	
(٤) +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 less than -50, the value is clipped to -50. If MVLL or MVHL value is greater than 2050, the value is clipped to 2050. 	
s +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000. 	
s) +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000. 	

Device	Data item	Description	Setting With PID limits	range Without PID limits	Setting side	Processing when the setting data are outside the setting range
Setting data fo	r No. 2 loop (device:	(͡s)+12 to (͡s)+21)				
	Operational					
s +12	expression					
0	selection					
s) +13	Sampling cycle (Ts)					
	Proportional					
s +14	constant					
	(KP)					
-	Integral					
s +15	constant					
	(Ti)	4				
0.140	Derivative constant					
s +16	(TD)	The same as Setting data	for No. 1 loop			
	Filter coefficient	-				
s +17	(α)					
	MV lower limit	1				
s +18	(MVLL)					
-	MV upper limit	1				
s +19	(MVHL)					
	MV change rate					
s +20	limit					
	($ riangle$ MVL)					
	PV change rate	1				
s +21	limit					
	($ riangle$ PVL)					
Setting data fo	<u>.</u>	· · · · · · · · · · · · · · · · · · ·				
	Operational					
s +(m+0)	expression					
	selection					
s +(m+1)	Sampling cycle					
	(Ts)	4				
	Proportional constant					
s +(m+2)	(KP)					
	Integral	4				
s +(m+3)	constant					
(c)	(Tı)					
	Derivative	1				
s +(m+4)	constant	The same as Quitter of t	for No. 4 last			
	(TD)	The same as Setting data	100 T 100p			
s +(m+5)	Filter coefficient					
(m·3)	(α)					
s +(m+6)	MV lower limit					
. ,	(MVLL)	4				
s +(m+7)	MV upper limit (MVHL)					
	MV change rate	4				
s +(m+8)	limit					
(a) +(((+b))	(△ MVL)					
0 (-)		1				
<u> </u>						
s +(m+9)	PV change rate					

m=(n-1)×10+2 n: number of loops

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU		0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.2 PIDCONT instruction

PIDCONT

PIDCONT(P)				P: Executing co	ondition : 于	
Structured Is PIDCC EN s		ST ENO:= PIDCONT	(EN, s);		instructions. PIDCONT	ates any of the follo PIDCONTP	wing
Input argument		ing condition umber of the device that i	s assigned in I/O da	ata area	:Bit :ANY16		
Output argument	ENO: Execut Setting data	ion result Internal device Bit Word - (R, ZR Bit	j≘\∏ t M	:Bit /ord U∭\G∭ –	Zn Const	ant Others

☆ Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by (s) or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

				Setting	range	0.44	Processing when the
Device	Data nar	ne	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
ঙি +0	Initial process	ing flag	Processing method at the start of PID operation	 0 : PID operation for the number of loops to be used is batch-processed in one scan. Other than 0: PID operation for the number of loops to be used is processed in several scans. 		User	_
(\$) +1 to (\$) +9	PID control work area (reserved by the system)			-	_	-	-
I/O data area f	or No. 1 loop (dev	vice: (s)+1	0 to (s) +27)				
s) +10	Set value	SV	• PID control target value	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If SV is less than 0, the value is clipped to 0. • If SV is greater than 2000, the value is clipped to 2000.

							2000, the value is clipped to 2000.
ঙ +11	Process value	PV	 Feedback data from the control target to the A/D conversion module 	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to -50. • If PV is greater than 2050, the value is clipped to 2050.
ঙ +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	-
s) +13	Process value after filtering	PVf	Process value obtained by calculation using operational expression. *1	-50 to 2050	-32768 to 32767	System	-

*1 : For process value after filtering (PVf), the value calculated based on the process value of input data are stored.

For the operational expression, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

				Setting	g range	0.541/10.01	Processing when the	
Device	Data na	me	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range	
s) +14	Manual manipulated value	MVman	• Store the data output from the D/A conversion module in manual operation.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVMAN is less than -50, the value is clipped to -50. • If MVMAN is greater than 2050, the value is clipped to 2050.	
s +15	Manual/ automatic selection	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	value	ic manipulated nanipulated	User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.	
s +16	Alarm	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 	60 b0 b1 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b1 b2 b2 b2 b2 b2 b2 b2 b2 b2 b2 b2 b2 b2	If PV variation is outside the limit range, '1' is set. If MV variation is outside the limit range, '1' is set.	User System		
(\$) +17 to (\$) +27			work area the system)		-	_	-	

PIDCONT

PID CONTROL INSTRUCTION

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PIDCONT

		Data name Description			g range Without PID	Setting side	Processing when the setting data are outside				
				limits	limits		the setting range				
I/O data area for			3 to (s) +45)								
s +28	Set value	SV									
s +29	Process value	PV									
s) +30	Automatic manipulated value	MV									
s) +31	Process value after filtering	PVf	The same as I/O data are	'he same as I/O data area for No. 1 loop							
ঙ +32	Manual manipulated value	MVman									
ه +33	Manual/ automatic selection	MAN/ AUTO									
s +34	Alarm	ALARM									
(\$) +35	Р	ID control	work area								
to	(re:	served by	the system)	-	_	-	_				
s +45											
I/O data area for		SV									
S +(m+0) S +(m+1)	Set value Process	PV									
s +(m+1)	value	1.0									
s +(m+2)	Automatic manipulated value	MV									
জ +(m+3)	Process value after filtering	PVf	The same as I/O data are	ea for No. 1 loop							
জ +(m+4)	Manual manipulated value	MVman									
জ +(m+5)	Manual/ automatic selection	MAN/ AUTO									
s +(m+6)	Alarm	ALARM									
 (\$) +(m+7) to (\$) +(m+17) 			work area the system)	-	_	-	-				

 $m=(n-1) \times 18+10$ n: number of loops

Precautions

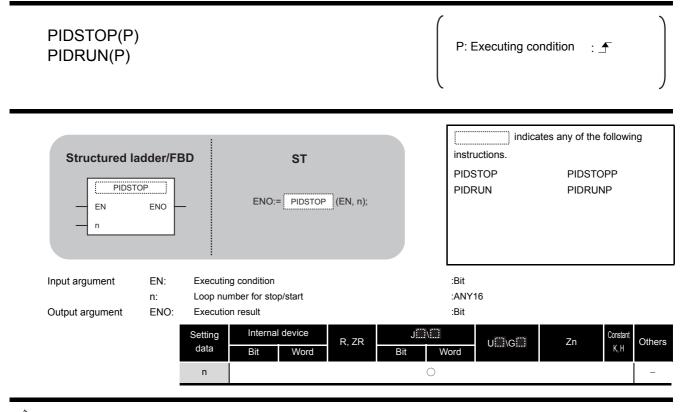
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are 04121' or lower. × The first five digits of the serial number are ○ '04122' or higher ○ The first five digits of the serial number are ○ '05031' or lower. × The first five digits of the serial number are ○ '05032' or higher. ○	0	0
Redundant CPU		0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.3 PIDSTOP instruction and PIDRUN instruction

PIDSTOP, PIDRUN



Grant Function

(1) PIDSTOP(P)

This instruction stops the PID operation for the loop number specified by 'n'.

(2) PIDRUN(P)This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.4 PIDPRMW instruction

PIDPRMW

PIDPRMW(F	²)						P: Ex	ecuting co	ndition :	_	
Structured Ia PIDPR EN n s		3D -	ENO:=	ST) (EN, n, s	;	instruct PIDPR	tions.	ates any of the		ng
Input argument	EN: n: s:	Loop nu Start nur changeo	1	-	tores PID co	ontrol data to be	:Bit :ANY16 o be :ANY16				
Output argument	ENO:	Execution Setting	1	l device	R, ZR	J\	:Bit	U∭\G∭	Zn	Constant	Others
		data	Bit	Word		Bit V	Vord		20	К, Н	Others
	-	n	0					0		0	-
		s	-)			-		-	_

Grant Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by (s).

(1) PID control data

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s) +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not
s +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	g range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
s) +2	Proportional constant (K _P)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User		
s +3	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	User		
s +4	Derivative constant (T⊳)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s +5	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		
s +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is not performed after values are replaced as follows: • If MVLL or MVHL value is	
s) +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 less than -50, the value is clipped to -50. If MVLL or MVHL value is greater than 2050, the value is clipped to 2050. 	

			Setting	range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
্ড +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • △ MVL value is less than 0, the value is clipped to 0. • △ MVL value is greater than 2000, the value is clipped to 2000.	
\$ +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000. 	

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04121' or lower.	×	×
	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Redundant CPU		0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6

MEMO

SOCKET COMMUNICATION FUNCTION INSTRUCTION

7.1	SOCOPEN Instruction
7.2	SOCCLOSE Instruction
7.3	SOCRCV Instruction
7.4	SOCRCVS Instruction
7.5	SOCSND Instruction
7.6	SOCCINF Instruction
7.7	SOCCSET Instruction
7.8	SOCRMODE Instruction
7.9	SOCRDATA Instruction

1

2 OVERVIEW

7.1 SOCOPEN Instruction

SP_SOCOPEN

QnUDE(H) LCPU

SP_SOCOP	EN						Exec	cuting co	ndition :	₫	
Structured I SP_SOC EN Un s1 s2		_	NO:= <u>SP_S</u>	ST	EN, Un, s1,	s2, d);	SP_SOCC		es the follow	ving instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO: d:	Dummy Connect Variable Executio Variable instructio	ion number that stores on result that turns O	control data		completion of th	:Bit :String :ANY16 :Array of AN :Bit e :Array of bit				
		Setting data	Internal Bit	device Word	R, ZR	J∰\∭ Bit V	U]\G[]]	Zn	Constant K, H	Others
	-	s1 s2	_	 	 					-	_
	-	(s2)	_ 		△ △*1					_	
		<u>u</u>	\square			al devices and fil	e registers pe	r program o	annot be use		tina data

Grant Function

This instruction establishes a connection.

Control Data

Device	Item	Setting data	Setting range	Setting side
@[0]	Execution type/ Completion type	Specify which to use the parameter values set by GX Works2 or the setting values of the following control data (@ [2] to @ [9]) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2. 8000H: Uses the settings of control data @ [2] to @ [9].	0000н, 8000н	User
愈[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
@[2]	Application setting area	 b15b14b13 to b10 b9 b8 b7 to b0 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	(See the left column.)	User
⊚[3]	Host station port No.	Specify the port number of the host station.	1н to 1387н, 1392н to FFFEн (400н or later is recommended)	User
@[4] @[5]	Destination IP address ^{*2}	Specify the IP address of the external device.	1н to FFFFFFFFн (FFFFFFFFн: broadcast)	User
© [6]	Destination port No. ^{*2}	Specify the port number of the external device.	1н to FFFFн (FFFFн: broadcast)	User
© [7] to © [9]	_	Unavailable	_	System

*1 : "Destination IP address" and "Destination port No" are neglected at Unpassive open.

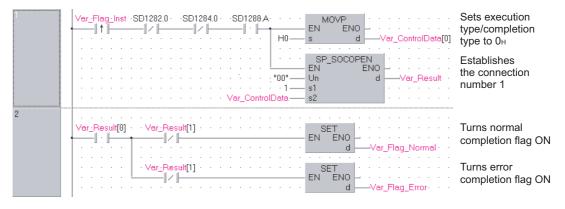
Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program opens the connection 1.

[Structured ladder/FBD]



[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=FALSE) &(SD1284.0=FALSE) &(SD1288.A=TRUE))THEN MOVP(TRUE, H0, Var_ControlData[0]); (* Sets execution type/completion type to 0H *) SP_SOCOPEN(TRUE, "00", 1, Var_ControlData, Var_Result); (* Establishes the connection number 1 *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(FALSE, Var_Flag_Normal); ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF;

END_IF;

7.2 SOCCLOSE Instruction

SP_SOCCLOSE



SP_SOCCL	OSE							Executing co	ondition	: 🖍	
Structured I SP SOC EN Un s1 s2		_	10:= <u>SP_S</u>	ST	EN, Un, s1,	s2, d);	SP_	SOCCLOSE	tes the follo	wing instr	uction.
Input argument	EN: Un: s1: s2:	Dummy Connect	g condition ("U0") ion number that stores o				:Bit :Strir :ANY	•	1		
Output argument	d:	Executio Variable instructio	n result that turns O on	N during on		completion o	:Bit		1		
		Setting data	Internal Bit	device Word	R, ZR	J⊞\/ Bit	 Word	UIII\GIII	Zn	Constant K, H	Other
	-	s1	_	0	0			_		0	-
	-	s2 (d)	_ *1		△ ^{*1} △ ^{*1}			_		-	-
		\odot				al devices and	d file regis	ters per program	cannot be u		ting da

Grant Function

This instruction shuts off a specified connection.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
፼[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program shuts off the connection 1 when the disconnect request flag turns ON or the external device closes the connection 1.

SD1282.0 Turns flag ON when ·SD1284.0 PLS I ENO ΕN -|| ↓ ||--|| • || open completion √ar Flaq d signal turns OFF Shuts off the Flag_Inst_SD1282.0 Var_Fla SP_SOCCLOSE EN ENO -I t Î -1ł connection number 1 "00" — Un s1 d -Var Result 1 Var_ControlData s2 SE EN Var_Flag Turns execution ET ENO Ð flag ON /ar Flag Exe Var_Result[0] Var_Result[1] SET EN ENO Turns normal 1/1 -|| • ||completion flag ON _Flaq_Normal Ver_Result[1] SET EN ENO Turns error -1 - 1completion flag ON Flag Error RST EN ENO Turns execution flag OFF ar Flaq_Exe

[Structured ladder/FBD]

```
[ST]
IF(LDF(TRUE, SD1282.0)&(SD1284.0=TRUE))THEN
                                  (* When open completion signal turns OFF *)
    PLS(TRUE, Var_Flag);
                                  (* Turns flag ON *)
END_IF;
IF(((LDP(TRUE, Var_Flag_Inst) & SD1282.0) OR Var_Flag) & (NOT Var_Flag_Exe)) THEN
    SP_SOCCLOSE(TRUE, "00", 1, Var_ControlData, Var_Result);
                                  (* Shuts off the connection number 1 *)
    SET(TRUE, Var_Flag_Exe);
                                  (* Turns execution flag ON *)
ELSE
    SP_SOCCLOSE(FALSE, "00", 1, Var_ControlData, Var_Result);
    SET(FALSE, Var_Flag_Exe);
END_IF;
IF(Var Result[0]=TRUE)THEN
                                        (* Execution finished *)
                                        (* Normal completion *)
    IF(Var_Result[1]=FALSE)THEN
          SET(FALSE, Var_Flag_Normal);(* Turns normal completion flag ON *)
    ELSE
                                        (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                        (* Turns error completion flag ON *)
    END IF;
    RST(TRUE, Var_Flag_Exe);
                                        (* Turns execution flag OFF *)
```

```
END_IF;
```

7.3 SOCRCV Instruction

SP_SOCRCV

QnUDE(H) LCPU

SP_SOCRC	V						Exec	uting con	dition :	_	
Structured I SP_SO EN Un s1 s2			0:= SP_S0	ST DCRCV (EM	N, Un, s1, s2, d	11, d2);	SP_SOCR	?	s the follow	wing instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO: d1: d2:	Dummy Connect Variable Executio Start nur Variable instructio	ion number that stores on n result nber of the o that turns O on	control data device that s N during on	stores receiv	completion of th	:Bit :String :ANY16 :Array of AN :Bit :ANY16 e :Array of bit				
		Setting data s1 s2	Internal Bit _ _	Word ○ △ ^{*1}	R, ZR ○ △*1	J\ Bit V	Vord	\G[]]	Zn	Constant K, H	Others _
	1	d1 d2	_ *1		*1 *1		-			-	-

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads receive data of a specified connection from the socket communication receive data area at the end process performed after the instruction execution.

E Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	_	-
		The instruction completion status is stored.		
<u>s</u> 2 [1]	Completion status	0 : Normal completion	_	System
		Other than 0 : Error completion (error code)		

Device	Item	Setting data	Setting range	Setting side
		Data length of the data read from the socket communication receive		
d1) +0	Receive data length	data area is stored.	0 to 2046	System
		(number of bytes)		
d1) +1				
to	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	-	System
(d1) +n		in ascending address order.		

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program reads data received from the external device.

[Structured ladder/FBD]

1	Var_Flag_Inst SD1282:0 SD1286:0 Var_Result[0] SP_SOCRCV I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I<	Reads data from the connection number 1
2		Turns normal completion flag ON
	····· ····· SET ······ ····· ····· ····· EN ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ······ ····· ····· ····· ····· ····· ····· ····· ······ ····· ····· ····· ······ ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ·····	Turns error completion flag OFF

[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE) &(Var_Result[0]=FALSE))THEN SP_SOCRCV (TRUE, "U0", 1, Var_ControlData, D500, Var_Result);

END_IF;

```
IF(Var_Result[0]=TRUE)THEN
IF(Var_Result[1]=FALSE)THEN
SET(TRUE, Var_Flag_Normal);
ELSE
SET(TRUE, Var_Flag_Error);
END_IF;
END_IF;
```

- (* Execution finished *)
- (* Normal completion *)
- (* Turns normal completion flag ON *)

(* Reads data from the connection number 1 *)

- (* Error completion *)
- (* Turns error completion flag ON *)

7.4 SOCRCVS Instruction

S_SOCRCVS



S_SOCRCV	Ś						E	xecuting co	ondition :		-)
Structured I S. SOC EN Un s			ENO:=	ST SOCRCVS	(EN, Un, s, (d);	s_soc	indica CRCVS	tes the follow	ving instr	uction.
Input argument	EN: Un:	Dummy					:Bit :String				
Output argument	s: ENO:	Connect Executio	ion number	(1 to 16)			:ANY16				
Output argument	d:			device that s	stores receiv	e data	:Bit :ANY16				
		Setting data	Interna Bit	device Word	R, ZR	J\i. Bit] Word	U\G	Zn	Constant K, H	Others –
			1	1	1						1

Function

This instruction reads receive data of a specified connection from the socket communication receive data area.

Control Data

Device	Item	Setting data	Setting range	Setting side
@[0]	Receive data length	Data length of the data read from the socket communication receive data area is stored. (number of bytes)	0 to 2046	System
(d) +1 to (d) +n	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	_	System

KET COMMUNICATION CTION INSTRUCTION

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program reads data received from the external device.

[Structured ladder/FBD]

1	
	Var_Flag_Inst + SD1282:0 + + SD1286:0 + + + + S_SOCRCVS + + + + • Reads data from
	EN ENO FINIT the connection
	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·

[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE))THEN S_SOCRCVS(TRUE, "U0", 1, D5000);

(* Reads data from the connection number 1 *)

END_IF;

7.5 SOCSND Instruction

SP_SOCSND



SP_SOCSN	D							Executing co	ndition	: 🗲	
Structured I SP_SOU EN Un s1 s2 s3			VO:= SP_SC	ST	Un, s1, s2, s3	, d);	SP_S	indicate	es the follo	wing instr	ucti
Input argument Output argument	EN: Un: s1: s2: s3: ENO: d:	Dummy Connect Variable Start nur Executio Variable	tion number that stores mber of the on result that turns O	control data device that s	stores send da e scan upon co		ANY1 :Bit	16 of ANY16 [01] 6			
		instructio		t the time of	f error completi	ion.					
		Setting data		l device Word	R, ZR	J∰\! Bit	Word	U\G] -	Zn	Constant K, H	0
		Setting data s1 s2	Interna Bit	Word ○ △*1		J[]]\[Zn	К, Н	0
		Setting data	Interna Bit –	Word	0	J[]]\[_	Zn	K, H	0

Grant Function

This instruction sends data to the external device of a specified connection.

E Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	_
		The instruction completion status is stored.		
<u>s</u> 2 [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

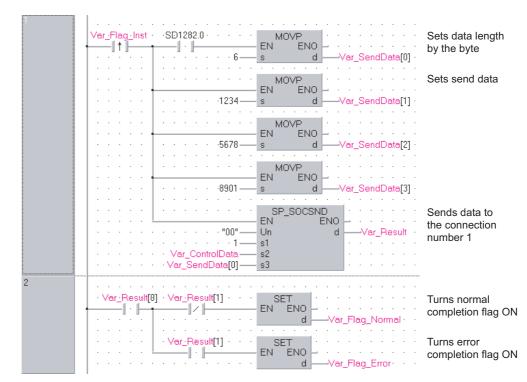
Device	Item	Setting data	Setting range	Setting side
s3 +0	Send data length	Specify the data length of the send data. (number of bytes)	0 to 2046	User
(s3) +1 to (s3) +n	Send data	Specify the send data.	_	User

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program sends data (1234, 5678, and 8901) to the external device using the socket communication function.



[Structured ladder/FBD]

[ST]

```
IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE))THEN
    MOVP(TRUE, 6, Var_SendData[0]);
                                             (* Sets data length by the byte *)
    MOVP(TRUE, 1234, Var_SendData[1]);
                                             (* Sets send data *)
    MOVP(TRUE, 5678, Var_SendData[2]);
    MOVP(TRUE, 8901, Var SendData[3]);
    SP_SOCSND(TRUE, "00", 1, Var_ControlData, Var_SendData[0], Var_Result);
                                       (* Sends data to the connection number 1 *)
END_IF;
IF(Var Result[0]=TRUE)THEN
                                             (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                             (* Normal completion *)
          SET(FALSE, Var_Flag_Normal);
```

ELSE

SET(TRUE, Var_Flag_Error);

END_IF; END IF;

- (* Turns normal completion flag ON *)
- (* Error completion *)
- (* Turns error completion flag OFF *)

7.6 SOCCINF Instruction

SP_SOCCINF

QnUDE(H) LCPU

SP_SOCCIN	NF						Executing co	ndition	: 🗲	
Structured I SP_SO EN Un s1 s2			NO:= SP_	ST SOCCINF	(EN, Un, s1,	s2, d);	SP_SOCCINF	es the follo	wing instr	uctio
Input argument Output argument	EN: Un: s1: s2: ENO: d:	Dummy Connect Variable Executic	ion number that stores on result	(1 to 16) control data connection			:Bit :String :ANY16 :Array of ANY16 [01] :Bit :Array of ANY16 [04]			
		Setting data s1	Interna Bit –	l device Word	R, ZR	J\	U[]\G[] ord -	Zn	Constant K, H	Othe

Function

This instruction reads connection information of a specified connection.

E Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
€2[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

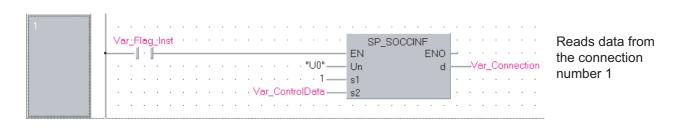
Device	Item	Setting data	Setting range	Setting side
			1н to	
-			FFFFFFF	
(0]	Destination IP address	The IP address of the external device is stored.	0н : No	System
d [1]			destination	- 9
			(FFFFFFFFH:	
			broadcast)	
			1н to FFFFн	
d [2]	Destination port No.	The port number of the external device is stored.	(FFFFн:	System
	d [2] Destination port No.		broadcast)	
	(d) [3] Host station port No.		1н to 1387н,	
d [3]		The port number of the host station is stored.	1392н to	System
			FFFEH	
		b15b14b13 to b10 b9 b8 b7 to b0 (d) [4] (3) 0 (2) (1) 0		
		①Communication method (protocol)		
		0: TCP/IP		
		1: UDP/IP		
d [4]	Application setting area	② With/without procedure in socket communication function	-	System
		1: Nonprocedural communication		
		③ Open system		
		00: Active open or UDP/IP		
		10: Unpassive open		
		11: Fullpassive open		

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program reads connection information of the connection number 1. [Structured ladder/FBD]



[ST]

IF(Var_Flag_Inst=TRUE)THEN

SP_SOCCINF(TRUE, "U0", 1, Var_ControlData, Var_Connection);

(* Reads data from the connection number 1 *)

END_IF;

7.7 SOCCSET Instruction

SP_SOCCSET



SP_SOCCS	ET						E	Executing co	ndition	: _	
Structured I SP_SOC EN Un s1 s2			ENO:= SP	ST SOCCSET	(EN, Un, s1,	s2);	SP_S	OCCSET	es the follo	wing instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO:	Dummy Connecti	on number that stores	(1 to 16) control data			:Bit :String :ANY10 :Array :Bit	6 of ANY16 [04]			
		Setting data (s1) (s2)	Interna Bit –	Vord	R, ZR	JENE Bit] Word	U∭\G∏ -	Zn	Constant K, H	Other

This instruction changes the IP address and port number of the external device of a specified connection.

(Available only with a UDP/IP connection)

Control Data

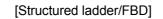
Device	Item	Setting data	Setting range	Setting side	
s2 [0]	System area	-	-	-	
፼[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System	
©[2] ፼[3]	Destination IP address	Specify the IP address of the external device.	1н to FFFFFFFн 0н : No destination (FFFFFFFFн: broadcast)	User	
⊚[4]	Destination port No.	Specify the port number of the external device.	1н to FFFFн (FFFFн: broadcast)	User	

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program changes the destination (destination IP address and port number) of the connection number 1 which is being open.



1	· Var_Flag:Inst · SD1282.0 · · · · · · · · · · · · · · · · · · ·
	H55DE s d Var_ControlData[2] to 10.97.85.222
	······································
	MOVP Sets destination
	H2001 EN ENO Var_ControlData[4] · · · · · port number to 8193
	· · · · · · · · · · · · · · · · · · ·
	SP_SOCCSET
	EN ENO of the connection
	$1 \dots 1 \dots$
	· · · · · · · · · · · · Var_ControlData — s2

[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=TRUE) THEN MOVP(TRUE, H55DE, Var_ControlData[2]); MOVP(TRUE, H0A61, Var_ControlData[3]);

(* Sets destination IP address to 10.97.85.222 *)

MOVP(TRUE, H2001, Var_ControlData[4]); (* Sets destination port number to 8193 *) SP_SOCCSET(TRUE, "U0", 1, Var_ControlData); (* Changes the setting of the connection number 1 *)

END_IF;

7.8 SOCRMODE Instruction

SP_SOCRMODE

QnUDE(H) LCPU

SP_SOCRM	IODE					Executing co	ndition	: 🕈	
Structured I SP SOCI EN Un s1 s2			ST _SOCRMODE	(EN, Un, s1, s2);	SP_SOCRMODE	es the follo	wing instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO:	Executing condition Dummy ("U0") Connection number (1 to 16) Variable that stores control data Execution result			~	:Bit :String :ANY16 :Array of ANY16 [03] :Bit			
		Setting data Bit (s) - (c) -	al device Word	R, ZR	JIII\III Bit V	Word	Zn	Constant K, H	Others _
Function									

This instruction changes the TCP receive mode (unavailable for a UDP connection) and receive data size.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
©2[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ଛ2[2]	TCP Receive Mode ^{*1}	Specify the TCP receive mode. 0 : TCP normal receive mode 1 : TCP fixed length receive mode	0, 1	User
©[3]	Receive Data Size	Specify the receive data size of the socket communication. (number of bytes)	1 to 2046	User

*1: Unavailable for a UDP connection.

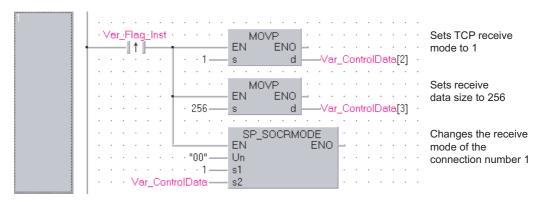
Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program changes the receive mode of the connection number 1 to TCP fixed length receive mode and changes its receive data length to 256 bytes.

After instruction execution, the connection number 1 turns the receive status signal ON when the length of receive data reaches 256 bytes.



[Structured ladder/FBD]

[ST]

IF (Var_Flag_Inst=TRUE) THEN MOVP(TRUE, 1, Var_ControlData[2]); (* Sets TCP receive mode to 1 *) MOVP(TRUE, 256, Var_ControlData[3]); (* Sets receive data size to 256 *) SP_SOCRMODE(TRUE, "00", 1, Var_ControlData); (*Changes the receive mode of the connection number 1 *)

END_IF;

SOCKET COMMUNICATION

7.9 SOCRDATA Instruction

S_SOCRDATA



S(P)_SOCR	DATA						P: Executing condition	:	ſ	
Structure EN Un s1 s2 n	ed ladder OCRDATA ENO d	/FBD	ENO:=	S_SOCRD/	ST (EN, Un	, s1, s2, n, d);	S_SOCRDATA		ving instr	
Input argument Output argument	EN: Un: s1: s2: n: ENO: d:	Dummy Connect Variable Number Executio	ion number that stores of read data	control data a (1 to 1024	words)	:Bit :String :ANY16 :Array of ANY16 [01] ANY16 :Bit ANY16				
		Setting data st) s2	Bit _ _	Vord	R, ZR	J\	U\G - -	Zn	Constant K, H	Others - -
		n d	-	0	0		_		0 -	_

Function

This instruction reads data for the specified number of words from the socket communication receive data area of a specified connection, and stores it.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Precautions

- (1) Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.
- (2) Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program reads the receive data length of the connection number 1.

[Structured ladder/FBD]

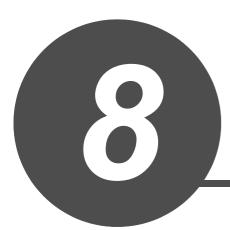
1	Var_Flag-Inst ·SD1282.0 · ·SD1286.0 · · · · · · · · · · · · · · · · · · ·	EN ENO Un d	-	Reads receive data length of the connection number 1
	Var_ControlData.			

[ST]

IF((Var_Flag_Inst=TRUE) & (SD1282.0=TRUE) &(SD1286.0=TRUE))THEN SP_SOCRDATA(TRUE, "00", 1, Var_ControlData, 1, Var_Data); (* Reads receive data length of connection number 1 *)

END_IF;

MEMO



BUILT-IN I/O FUNCTION INSTRUCTION

8.1	Positioning Function Dedicated Instruction	8-2
8.2	Counter Function Dedicated Instruction	8-18

8.1 Positioning Function Dedicated Instruction

8.1.1 IPPSTRT instruction

IPPSTRT1, IPPSTRT2

LCPU

Structured ladder/FBD ST instructions.	s any of the following]
EN ENO ENO ENO ENO: [IPPSTRT1] (EN, n);	IPPSTRT1P IPPSTRT2P	
Input argument EN: Executing condition :Bit n: Positioning data number (Setting range: 1 to 10) :ANY16 Output argument ENO: Execution result :Bit		
Setting data Internal device R, ZR Jiii\iii Bit Word Bit Word	Zn Constant	Others

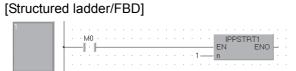
Grant Function

This instruction specifies a data number to be executed for 'n' from the positioning data No. 1 to No. 10 which are previously set in GX Works2, and starts the specified axis (refer to the following).

- IPPSTRT1(P): Axis 1
- IPPSTRT2(P): Axis 2

Program Example

The following program starts the "Positioning Data" No. 1 of the Axis 1 when M0 turns ON.



[ST] IPPSTRT1(M0, 1);

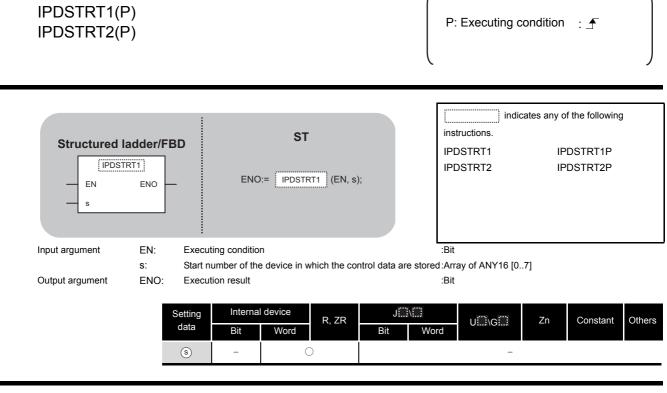
BUILT-IN I/O FUNCTION

8.1.2 IPDSTRT instruction

IPDSTRT1, IPDSTRT2

.

LCPU



Granitical Function

Regardless of "Positioning Data" No. 1 to No. 10 which are previously set in GX Works2, this instruction starts the positioning of the specified axis (refer to the following) using the data stored in the devices starting from \odot .

- IPDSTRT1(P): Axis 1
- IPDSTRT2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side	
s [0]	Control system	 Positioning control (ABS) Positioning control (INC) Speed/position switching control (forward RUN) Speed/position switching control (reverse RUN) Current value change Speed control (forward RUN) 	1 to 7		
		7: Speed control (reverse RUN)			
s [1]	Acceleration/deceleration time	eleration/deceleration time –		User	
ঙ [2]	Deceleration stop time	o time –			
s [3]	Dwell time	-	0 to 65535 (ms) ^{*1}		
s [4]	Command speed		0 to 200000		
s [5]			(pulse/s) ^{*2}		
ঙ [6]			-2147483648 to		
ঙ [7]	Positioning address/movement amount	-	2147483647 (pulse)		

*1: Enter the setting value to the program as described below.

1 to 32767: Enter in decimal

- 32768 to 65535: Enter after converting it to hexadecimal
- *2: The restricted speed value may be applied when the set value of the command speed is not within 0 to 200000.

Program Example

The following program sets the following positioning data and starts the axis 1 when M0 turns ON.

Device	Item	Setting data			
D0	Control system	Positioning control (ABS)			
D1	Acceleration/deceleration time	1000 (ms)			
D2	Deceleration stop time	1000 (ms)			
D3	Dwell time	0 (ms)			
D4, D5	Command speed	20000 (pulse/s)			
D6, D7	Positioning address/movement amount	100000 (pulse)			

[Structured ladder/FBD]

		M	ر ال				•					- EN ENO -
		<u>.</u>	2					.			· · 1—	s d
· ·				•	·	•	•	·		•		
								·			·1000	s d
	1				÷	÷	÷		÷	÷		
							÷					- EN ENO -
· ·								·	·	·	·1000	s d
						÷	÷		÷	÷		MOV
.								-				
·						•		·	•		· · 0 —	s d
								1	Ĵ			
·								+				EN ENO
1:					•	÷		11	÷	:	20000 —	s d
								.				DMOV
·				•	·	·	÷	\vdash		_	100000	- EN ENO -
					:				Ĵ	÷	100000	s d
								.				IPDSTRT1P
					:		÷				· D0	-EN EN -s
.											20	

[ST]

MOV(M0, 1, D0); MOV(M0, 1000, D1); MOV(M0, 1000, D2); MOV(M0, 0, D3); DMOV(M0, 20000, D4); DMOV(M0, 100000, D6); IPDSTRT1P(M0, D0);

8.1.3 IPSIMUL instruction

IPSIMUL

LCPU

IPSIMUL(P))	P: Executing condition :			
Structured EN n1 n2	Iadder/FBD ST	indicates any of the following instructions. IPSIMUL IPSIMULP			
Input argument Output argument	EN:Executing conditionn1:Axis 1 positioning data numbern2:Axis 2 positioning data numberENO:Execution result	:Bit :ANY16 :ANY16 :Bit			
	Setting data Internal device R, ZR Bit Bit </td <td>JIII \ Word Zn Constant Others - - - - - - - - - -</td>	JIII \ Word Zn Constant Others - - - - - - - - - -			

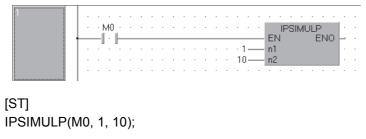
Grant Function

This instruction simultaneously starts the positioning of the axis 1 positioning data number specified by n1 and the axis 2 positioning data number specified by n2.

Program Example

The following program simultaneously starts the axis 1 positioning data No. 1 and the axis 2 positioning data No. 10 when M0 turns ON.

[Structured ladder/FBD]



LCPU

8.1.4 IPOPR instruction

IPOPR1, IPOPR2

8

IPOPR1(P) IPOPR2(P)		P: Executing condition :
Structured I		indicates any of the following instructions. IPOPR1 IPOPR1P IPOPR2 IPOPR2P
Input argument	EN: Executing condition	:Bit
input argument	s: Start number of the device in which the control data are s	
Output argument	ENO: Execution result	:Bit
	Setting data Internal device R, ZR Bit Word Bit	UUUGU Zn Constant Others

Grant Function

This instruction starts the OPR of which type is specified by \odot on the specified axis (refer to the following).

- IPOPR1(P): Axis 1
- IPOPR2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
		1: Machine OPR		
s [0]	OPR type	2: Fast OPR (OP address)	1 to 3	
		3: Fast OPR (standby address)		
s [1]	Standby address		-2147483648 to	User
011	,		2147483647 (pulse)	
s [2]	(Set only when Fast OPR (standby address (3)) is set for the OPR type)	-	(Ignored when other than	
0 [-]	(3)) is set for the OPR type)		standby address (3))	

Program Example

The following program starts the machine OPR of the axis 1 when M0 turns ON.

Device	Item	Setting data
D0	OPR type	Machine OPR
D1, D2	Standby address	0 (Ignored)

[Structured ladder/FBD]

1													
		• M0									· ·	·	NOV
•											· 1—	_	S C ENO
								·				. '	· · · · · · ·
	· ·				·	·		·	·	·	· ·	·	DMOV · · · ·
	· ·							+				-	EN ENO
	· ·	• •		• •		•		·			· 0 —	-	s d — D1 ·
	· · ·	• •		• •				·			• •	•	<u> </u>
	- · ·	• •						·			· ·		IPOPR1P
	· ·			• •	•			<u> </u>	 			-	EN ENO
	· · ·	• •	·	•		·		• •			D0-	-	S
	· ·	• •	•	• •	•	·	·	• •	·	•	• •	·	

[ST] MOV(M0, 1, D0); DMOV(M0, 0, D1); IPOPR1P(M0, D0);

8.1.5 IPJOG instruction

IPJOG1, IPJOG2

LCPU

8

JOG1		

IPJOG1 IPJOG2

Structured Ia PJOC EN s1 s2		3D -	ENO:=	ST IPJOG1	(EN, s1, s	2);	inst IPJ	indicates any of the following instructions. IPJOG1 IPJOG2							
Input argument Output argument	EN: s1: s2: ENO:	Start nur	n specifica Ird RUN Ise RUN	e device in v	vhich the co OG operatio		:Bit stored:Arra :Bit :Bit	ay of ANY16 [0.	3]						
		Setting data s1 s2	Internal device R, ZR JIIII Bit Word Bit Word							Constant	Others				

Grant Function

This instruction starts the JOG operation of the specified axis (refer to the following).

- IPJOG1: Axis 1
- IPJOG2: Axis 2

The JOG operation is executed in the direction specified by @, using the JOG speed, JOG acceleration/deceleration time stored in the devices starting from @.

Control Data

Device	Item	Setting data	Setting range	Setting side
s1 [0]	JOG speed		0 to 200000	
s1 [1]			(pulse/s) ^{*1}	User
s1 [2]	JOG acceleration time	-	0 to 32767 (ms)	0000
s1 [3]	JOG deceleration time	-	0.0002707 (113)	

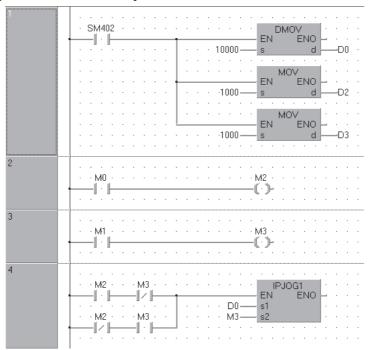
*1: The restricted speed value may be applied when the set value of the JOG speed is not within 0 to 200000.

Program Example

The following program starts the forward JOG operation when M0 turns ON, and starts the reverse JOG operation when M1 turns ON.

Device	Item	Setting data
D0, D1	JOG speed	10000 (pulse/s)
D2	JOG acceleration time	1000 (ms)
D3	JOG deceleration time	1000 (113)

[Structured ladder/FBD]



[ST] DMOV(SM402, 10000, D0); MOV(SM402, 1000, D2); MOV(SM402, 1000, D3); OUT(M0, M2); OUT(M1, M3); IPJOG1(M2 AND NOT M3 OR NOT M2 AND M3, D0, M3);

SUILT-IN I/O FUNCTION

8.1.6 IPABRST instruction

IPABRST1, IPABRST2

LCPU

IPABRST1 IPABRST2		Executing condition :
Structured PAB EN s		indicates any of the following instructions. IPABRST1 IPABRST2
Input argument	EN: Executing condition	:Bit
	s: Start number of the device for input	:Array of bit [02]
Output argument	ENO: Execution result d: Start number of the device for output	:Bit :Array of bit [02]
	Setting dataInternal deviceR, ZRBitSOOOOOOO	U∭\G∭ Zn Constant Others

Grant Function

This instruction executes the absolute position restoration of the specified axis (refer to the following) by communicating with the servo amplifier using the input device specified by s and output device specified by s.

- IPABRST1: Axis 1
- IPABRST2: Axis 2

Control Data

(1) Signals imported from servo amplifier

Device	Item	Setting data	Setting range	Setting side
s [0]		ABS send data bit0		
ঙ [1]	Signals imported from servo amplifier	ABS send data bit1	0, 1	User
s [2]		ABS send data ready		

(2) Signals exported to servo amplifier

Device	Item	Setting data	Setting range	Setting side
(D) (D)		Servo ON		
d [1]	Signals exported to servo amplifier	ABS transfer mode	-	System
d [2]		ABS request flag		

Program Example

This instruction executes the absolute position restoration of the axis 1 when M0 turns ON.

- X20 to X22: Signals imported from the servo amplifier
- Y30 to Y32: Signals exported to the servo amplifier

[Structured ladder/FBD]

1																													
	•	1	M0	ć.	÷		·		·	·		·	·	÷	·	·	·	-	IP.	AE	R	ST	1		÷	·		÷	·
		-	1											. ;	×20) —	_	S	И				11/1	d	_	_Y	30		
	•	·	·	·	·	·	·	÷	·	·	÷	·	·	·	·	·	•	•	÷	÷	·	•	÷	•	÷	·	·	·	·

[ST] IPABRST1(M0, X20, Y30);

8.1.7 IPSTOP instruction

IPSTOP1, IPSTOP2

8

T-IN I/O FUNCTION

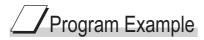
IPSTOP1 IPSTOP2

	Structured ladder/FBD	ST ENO:= IPSTOP (EN);	in IF	indi structions. PSTOP1 PSTOP2	cates any c	of the following]
Bit Word Bit Word	Output argument ENO: Exec	cution result	:В	it	Zn	Constant	Others

Grant Function

This instruction stops the positioning of the specified axis (refer to the following).

- IPSTOP1: Axis 1
- IPSTOP2: Axis 2



The following program stops the axis 1 when M0 turns ON.

[Structured ladder/FBD]

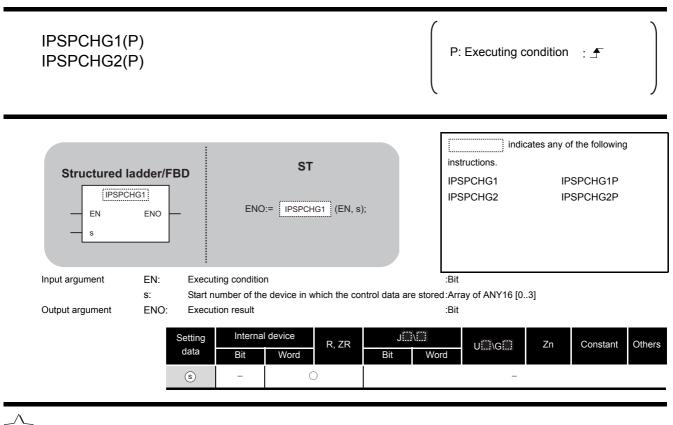




8.1.8 IPSPCHG instruction

IPSPCHG1, IPSPCHG2

LCPU



Function

This instruction changes the speed of the specified axis (refer to the following) using the acceleration/deceleration time at speed change, deceleration stop time at speed change, and new speed value stored in the devices starting from (s).

- IPSPCHG1(P): Axis 1
- IPSPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	Acceleration/deceleration time at speed change	-	0 to 32767 (ms)	
s [1]	Deceleration stop time at speed change	-		User
s [2]	New speed value	_	0 to 200000	
s [3]	New speed value		(pulse/s) ^{*1}	

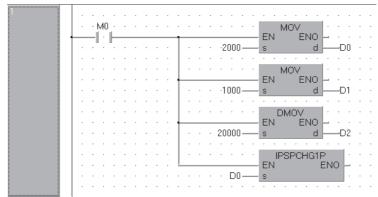
*1: The restricted speed value may be applied when the set value of the new speed is not within 0 to 200000.

Program Example

The following program changes the speed of the axis 1 when M0 turns ON.

Device	Item	Setting data
D0	Acceleration/deceleration time at speed change	2000 (ms)
D1	Deceleration stop time at speed change	1000 (ms)
D2, D3	New speed value	200000 (pulse/s)

[Structured ladder/FBD]



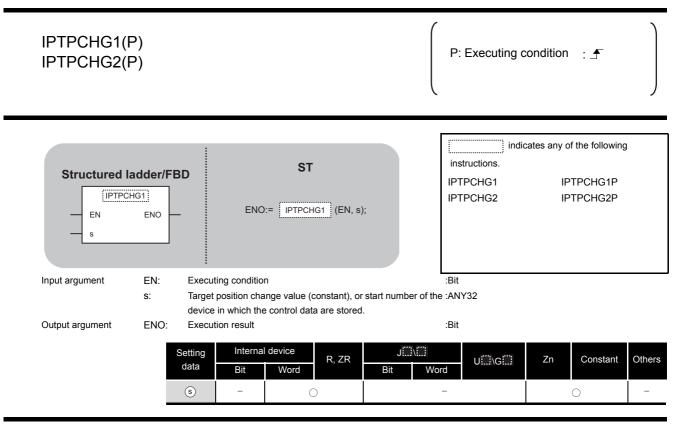
[ST]

MOV(M0, 2000, D0); MOV(M0, 1000, D1); DMOV(M0, 20000, D2); IPSPCHG1P(M0, D0); 8

8.1.9 IPTPCHG instruction

IPTPCHG1, IPTPCHG2

LCPU



Grant Function

This instruction changes the position of the specified axis (refer to the following) to the new target position specified by (s).

- IPTPCHG1(P): Axis 1
- IPTPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
s +0			-2147483648 to	
	Target position change value	-	2147483647	User
s +1			(pulse/s)	

Program Example

The following program changes the target position of the axis 1 to 2000 when M0 turns ON. [Structured ladder/FBD]



[ST] IPTPCHG1P(M0, 2000);

8.2 Counter Function Dedicated Instruction

8.2.1 ICCNTRD instruction

ICCNTRD1, ICCNTRD2

LCPU

ICCNTRD1(P) ICCNTRD2(P)			P: Executing o	condition : 于	
Structured ladder/FBD	ST ENO:= ICCNTRD1 (EN);		instructions. ICCNTRD1 ICCNTRD2	cates any of the following ICCNTRD1P ICCNTRD2P	g
	euting condition eution result Internal device Bit Word	J:::\: Bit Wo	:Bit :Bit rd	Zn Constant	Others

Function

This instruction stores a value at the time of instruction execution to the current value of the specified CH (refer to the following).

Instruction	CH	Device in which the current value is stored
ICCNTRD1(P)	CH1	SD1880, SD1881
ICCNTRD2(P)	CH2	SD1900, SD1901

Program Example

The following program stores the most recent value to the CH 1 current value (SD1880, SD1881) when M0 turns ON.

[Structured ladder/FBD]



[ST] ICCNTRD1(M0);

8.2 Counter Function Dedicated Instruction 8.2.1 ICCNTRD instruction

LCPU

8.2.2 ICRNGWR instruction

ICRNGWR1, ICRNGWR2

ICRNGWR1, ICRNGWR2

8

ICRNGWR1(P) ICRNGWR2(P)	P: Executing condition : _
Structured ladde ICRNGWR1 EN EN s1 s2	indicates any of the following instructions. ICRNGWR1 ICRNGWR1P ICRNGWR2 ICRNGWR2P
Input argument EN s1	 :Bit :ANY32

to 2147483647 and (s1 , s1 +1) \leqq (s2 , s2 +1) • Device: Within the range of specified device

the device that stores the ring counter upper limit value Constant: Settings which is within the range of -2147483648 to 2147483647 and (s1 , s1 +1) \leqq (s2 , s2 +1) Device: Within the range of specified device

Ring counter upper limit value (constant), or start number of :ANY32

s2:

ENO:

Execution result

Setting	Interna	l device	R, ZR	J		U\G	Zn	Constant	Others	
data	Bit	Word	Ν, ΖΙΧ	Bit	Word	0:		Constant	Cultoro	
(s1)	-	0)		-			-		
(s2)	-	0)		-			-		

:Bit

Grant Function

Output argument

This instruction sets the ring counter lower limit value and the ring counter upper limit value of the specified CH (refer to the following).

- · ICRNGWR1(P): CH1
- · ICRNGWR2(P): CH2

Program Example

The following program sets -100000 for the ring counter lower limit value and 100000 for the ring counter upper limit value of CH 1 when M0 turns ON.

[Structured ladder/FBD]

1	.																									
	·	÷	vł0	÷	·	·	÷	·	÷	·		÷	·						OL 0	NG\	٨R	1P		.	·	·
	-	-1	÷	F	_	_	_	_	_	_	_	_						EN				E١	10	2	·	·
														~~	~~			s1						1	•	•
	· ·	·		·	·	·	·	·		·	·	·	• 1	00	00	0-	_	s2						·	·	·
	·				·																•					

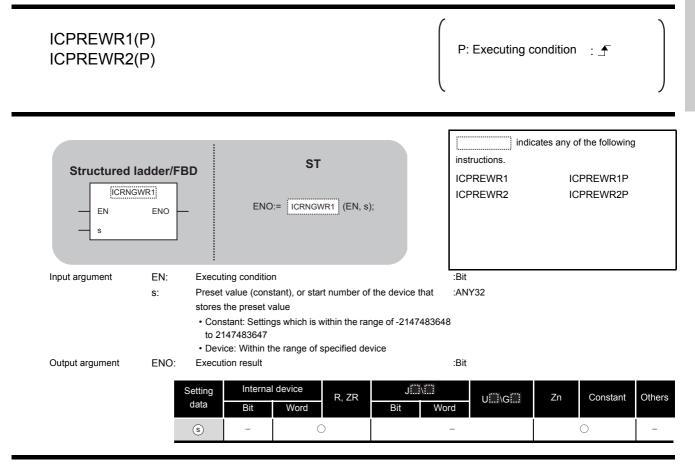
[ST] ICRNGWR1P(M0, -100000, 100000);

BUILT-IN I/O FUNCTION

8.2.3 ICPREWR instruction

ICPREWR1, ICPREWR2

LCPU



Grant Function

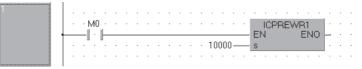
This instruction sets a preset value of the specified CH (refer to the following).

- ICPREWR1(P): CH1
- ICPREWR2(P): CH2

Program Example

The following program sets 10000 for the preset value of CH 1 when M0 turns ON.

[Structured ladder/FBD]



[ST] ICPREWR1(M0, 10000);

8.2.4 ICLTHRD instruction

ICLTHRD1, ICLTHRD2

LCPU

ICLTHRD1(I ICLTHRD2(I					P: Executing o	condition	: 🖍	
Structured ICLTH EN n			ST	d);	indi instructions. ICLTHRD1 ICLTHRD2	IC	f the following LTHRD1P LTHRD2P	I
Input argument	EN:	Executing condition	n		:Bit			
		Latch count value	(1,2)		:ANY16			
Output argument	d:	Execution result Start number of th stored	e device in which the	latch count value	:Bit is:ANY32			
		etting Internal lata Bit	device R, ZR	J∭\∭ Bit Wo	rd U\G	Zn	Constant	Other
		n –	0		_		0	-
		- b	0		_	0		1

Grant Function

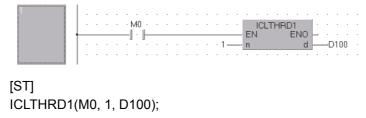
This instruction stores a latch count value n of the specified CH (refer to the following) to .

- ICLTHRD1(P): CH1
- ICLTHRD2(P): CH2

Program Example

The following program stores the latch count value 1 of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder/FBD]

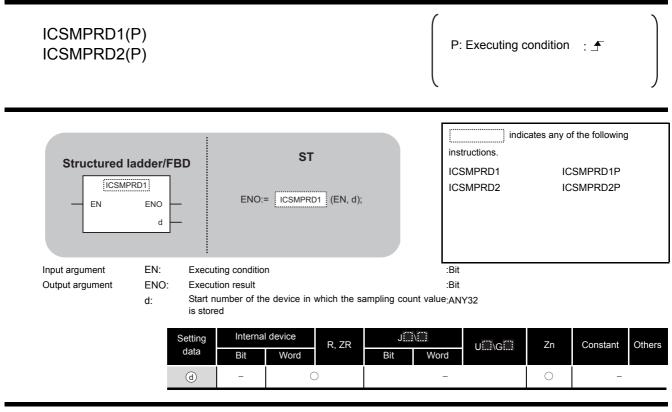


8.2.5 ICSMPRD instruction

ICSMPRD1, ICSMPRD2

LCPU

8



This instruction stores a sampling count value of the specified CH (refer to the following) to .

- ICSMPRD1(P): CH1
- ICSMPRD2(P): CH2

Program Example

The following program stores the sampling count value of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder/FBD]

1		

[ST] ICSMPRD1(M0, D100);

8.2.6 ICCOVWR instruction

ICCOVWR1, ICCOVWR2

LCPU

eno:=	ST	s);	indic instructions. ICCOVWR1 ICCOVWR2	ates any of the following ICCOVWR1P ICCOVWR2P	l
Coincidence output N the device in which co • Constant: Settings to 2147483647	lo. n point (constant), oincidence output No. which is within the ran	n point is stored ige of -2147483648			
O: Execution result Setting Internal de data Bit n -	evice R, ZR	JE	:Bit rd -	Zn Constant	Others _
0	Coincidence output N the device in which c • Constant: Settings to 2147483647 • Device: Within the Execution result Setting data	the device in which coincidence output No. • Constant: Settings which is within the ran to 2147483647 • Device: Within the range of specified device Execution result Setting Internal device R, ZR n	Coincidence output No. n point (constant), or start number of the device in which coincidence output No. n point is stored • Constant: Settings which is within the range of -2147483648 to 2147483647 • Device: Within the range of specified device : Execution result Setting Internal device R, ZR JIII Bit Word N, ZR Bit Wo	Coincidence output No. n point (constant), or start number of :ANY32 the device in which coincidence output No. n point is stored • Constant: Settings which is within the range of -2147483648 to 2147483647 • Device: Within the range of specified device : Execution result :Bit Setting Internal device R, ZR JUNC UUNG n – O –	Coincidence output No. n point (constant), or start number of :ANY32 the device in which coincidence output No. n point is stored • Constant: Settings which is within the range of -2147483648 to 2147483647 • Device: Within the range of specified device : Execution result :Bit Setting Internal device R, ZR JUNC UNG Zn Constant n _ O O

Grant Function

This instruction stores a coincidence output No. n point of the specified CH (refer to the following).

- ICCOVWR1(P): CH1
- ICCOVWR2(P): CH2

Program Example

The following program sets the value of D100 and D101 to the coincidence output No. 2 point of CH 1 when M0 turns ON.

[Structured ladder/FBD]

[ST] ICCOVWR1(M0, 2, D100);

8.2.7 ICFCNT instruction

ICFCNT1, ICFCNT2

8

ICFCNT1 ICFCNT2

Structured la ICFCN EN		ENO:	ST = ICFCNT1 (EN,	;(t	ins IC	FCNT1 FCNT2	cates any c	of the following	I
Input argument Output argument	ENO: Exec		n e device that stores th	e measured fre	:Bit :Bit quency :AN				
	Setting data	Interna Bit	l device R, ZR Word	J∭ Bit	\ Word	U∭\G∭	Zn	Constant	Others
	d	-	0		_		0	_	

Grant Function

This instruction measures a frequency of the specified CH (refer to the following) according to the settings such as the frequency measurement unit time setting.

- · ICFCNT1: CH1
- ICFCNT2: CH2

The measured value is stored to (a) at the ICFCNT instruction execution. The measurement starts at the rising pulse of the ICFCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program executes the frequency measurement of CH 1 while M0 is ON.

[Structured ladder/FBD]

1	.																								
		· M0						·	·	·	·	·	·	·		ICF	FCI	NŢ	1		•				
		- 1														N			d d		C				
	·	• •	•	•	·	·	·	1	·	·	1	·	·		•			·	• •	•		·	·	·	·

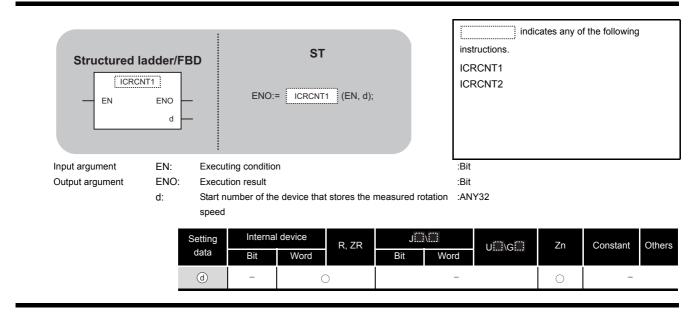
[ST] ICFCNT1(M0, D100);

8.2.8 ICRCNT instruction

ICRCNT1, ICRCNT2

LCPU

ICRCNT1 ICRCNT2



\overleftrightarrow Function

This instruction measures a rotation speed of the specified CH (refer to the following) according to the settings such as the rotation speed measurement unit time setting.

- ICRCNT1: CH1
- ICRCNT2: CH2

The measured value is stored to (a) at the ICRCNT instruction execution. The measurement starts at the rising pulse of the ICRCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program stores the rotation speed measurement value of CH 1 to D100 and D101 while M0 is ON.

[Structured ladder/FBD]



[ST] ICRCNT1(M0, D100);

LCPU

8.2.9 ICPLSRD instruction

ICPLSRD1, ICPLSRD2

CPLSRD1, ICPLSRD2

8

ICPLSRD1(P) P: Executing condition : ICPLSRD2(P) indicates any of the following instructions. ST Structured ladder/FBD ICPLSRD1 ICPLSRD1P ICPLSRD1 ICPLSRD2 ICPLSRD2P ENO:= ICPLSRD1 (EN, d); ΕN ENO d Input argument EN: Executing condition :Bit Output argument ENO: Execution result Bit d: Start number of the device that stores the measured pulse :ANY32 value Setting Internal device J....\.... R, ZR Constant Zn Others U....\G.... data Bit Word Word Bit d _ _



This instruction stores a measured pulse value of the specified CH (refer to the following) to (a).

- · ICPLSRD1(P): CH1
- ICPLSRD2(P): CH2

Program Example

The following program stores the measured pulse value of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder/FBD]



[ST] ICPLSRD1(M0, D100);

8.2.10 ICPWM instruction

ICPWM1, ICPWM2

LCPU

ICPWM1 ICPWM2

Structured I EN s1 s2			ST ICPWM1 (EN, s1, s	ICF	indic tructions. PWM1 PWM2	cates any of the	following							
Input argument	EN:	Executing conditio	n	:Bit										
	s1:	PWM output ON til	me setting value (consta	ant), or start number :AN	Y32									
		of the device that s	stores the PWM output 0	ON time setting										
		value												
		Constant: Setting	gs which is 0 or within th	e range of 10 to 10 ⁷										
		(0.1µs) and (🗊	, (s1) +1) \leq ((s2) , (s2)) +1)										
		Device: Within the second	ne range of specified de	vice										
	s2:	s2: PWM output cycle time setting value (constant), or start :ANY32												
			ce that stores the PWM	output cycle time										
		setting value		-										
			gs which is 0 or within th											
			, (1) +1) \leq ((1) , (2)											
	FNO		ne range of specified de											
Output argument	ENO:	Execution result		:Bit										
	S	etting Interna	device	J	Second Second									
		data Bit	R, ZR	Bit Word	U\G	Zn Co	onstant	Other						
		s1 -	0	_		0		-						
		s2 -	0	_		0		_						

Grant Function

This instruction outputs a PWM waveform of the specified CH (refer to the following).

- ICPWM1: CH1
- ICPWM2: CH2

The PWM waveform with the ON time ($_{\odot}$) and the cycle time ($_{\odot}$) is output from the coincidence output No.1 signal during the ICPWM instruction execution. The output of the PWM waveform starts from OFF.

Program Example

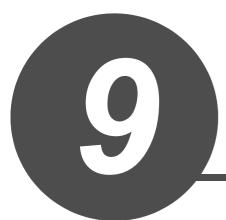
The following program outputs the PWM waveform with 1μ s ON time and 5μ s cycle time from CH 1 while M0 is ON.

[Structured ladder/FBD]



[ST] ICPWM1(M0, 10, 50);

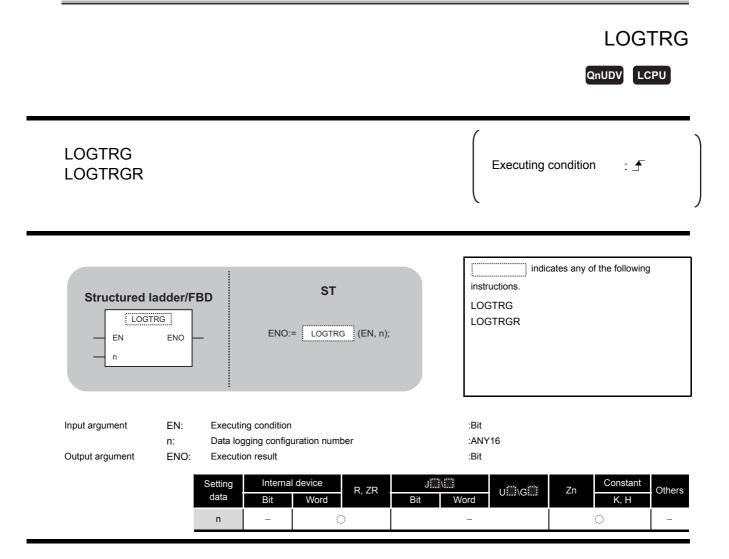
MEMO



DATA LOGGING FUNCTION INSTRUCTION

9.1	LOGTRG Instruction, LOGTRGR Instruction.	9-2

9.1 LOGTRG Instruction, LOGTRGR Instruction



Grant Function

LOGTRG

- (1) The LOGTRG instruction generates a trigger in the trigger logging of the data logging configuration number specified by 'n'.
- (2) A value from 1 to 10 is set for 'n'.
- (3) When the LOGTRG instruction is executed, the special relay (data logging trigger) of the data logging configuration number specified by 'n' turns ON. After executing the trigger logging for the number of times set for "Number of records", the instruction latches the data and stops the trigger logging.
- (4) Validated when "When trigger instruction executed" is selected as the trigger condition.
- (5) No processing is performed with the following condition.
 - Specifying a data logging configuration number for which other than "When trigger instruction executed" is specified as the trigger condition.
 - Specifying a data logging configuration number which is not configured.
 - Specifying a data logging configuration number which is currently used for continuous logging.
 - Executing the LOGTRG instruction again without executing the LOGTRGR instruction after the LOGTRG instruction.

LOGTRGR

- (1) The LOGTRGR instruction resets the LOGTRG instruction of the specified data logging configuration number.
- (2) When the LOGTRGR instruction is executed, the special relay (data logging trigger, trigger logging complete) of the data logging configuration number specified by 'n' turns OFF.
- (3) When the instruction is executed while transferring data in the buffer memory to the SD memory card, the instruction process is held until data transfer is complete.

Coperation Error

In the following case, an operation error occurs, the error flag (SM0) is turned ON, and the corresponding error code is stored to SD0.

The value for n is outside the range of 1 to 10

(Error code: 4100)

Caution

Use the LCPU other than L02SCPU and L02SCPU-P.

Program Example

The following program executes the LOGTRG instruction on the data logging configuration No. 1 when X0 turns ON, and resets the trigger condition with the LOGTRGR instruction when X1 turns ON.

[Structured ladder/FBD]

1			X0	L	•••	•	•	•		•	•		•		- LOC	iTF	RG		•	•
			· ·				•			•	•								•	•
			×1		· ·										LOG					
	+	_		ŀ									1_	_	EN	ł	ENC			:

[ST] LOGTRG(X0,1); LOGTRGR(X1,1);



10.1	SFC Control Instruction	1	0-2

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10.1 SFC Control Instruction

10.1.1 SFCSCOMR instruction



High performance Process Redundant Universal

S(P)_SFCSCOMR

P: Executing condition :

			indicat	tes any of the following
Structured la	adder/FBI	ST	instructions.	
			S_SFCSCOMR	SP_SFCSCOMR
- n1 - n2 - n3	d1 d2	ENO:= <u>SP_SFCSCOMR</u> (EN, n1, n2, n3, d1, d2);		
Input argument	EN:	Executing condition	:Bit	
	n1:	Block No. of an SFC program that read comments or	: ANY16	
		device number where block No. is stored.		
	n2:	The device number where the number of comments to read or the number of comments is stored.	: ANY16	
	n3:	The number of comments to read in a single scan or	: ANY16	
		device number where the number of comments is stored.		
Output argument	ENO:	Execution result	:Bit	
	d1:	The first number of device that stores comment read.	: ANY16	
	d2:	A device that turns ON for 1 scan at completion of the instruction.	:Bit	

Setting		ernal vice		J			Zn Constant	Expansion	Otherm	Sequence	SFC Program		Execution Site			
data	Bit	Word	R	Bit	Word	U\G	Zn	К, Н	SFC BLm\Sn	Others	Program	Step	Transition Condition	Block	Step	Transition Condition
n1	-	0				_		0	-				-		-	-
n2	-	0				_		0	-				-		-	-
n3	-	0				_		0			0		Ι	0	-	-
d1	I	O*1	1			_		-	-				-		-	_
d2	O*1					_		-	Ι				I		-	-
													*1: Lo	ocal devi	ce can	not be used.

☆ Function

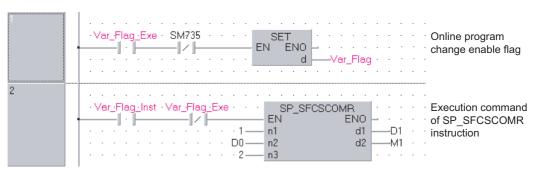
This function reads step comments being activated in the SFC block specified at , by the number of comment specified at , and stores those to the device number of after specified at .

- For High Performance model QCPU, use the function version is B or later and the first five digits of the serial number are '07012' or higher.
- For Process CPU and Redundant CPU, use the first five digits of the serial number are '07032' or higher.
- For Universal CPU, use the first five digits of the serial number are '12052' or higher. Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU can not be used.

Program Example

This program reads 2 comments being activated at the SFC block No.1 when X1 is turned ON, and stores those to the storage device after D0.

(The number of comment to be read
in a single scan is also set in 2.)



[Structured ladder/FBD]

[ST]

IF((Var_Flag_Exe=TRUE) & (SM735=FALSE))THEN

(*Online program change execution command*) SET(TRUE, Var_Flag); (*Online program change enable flag*) END_IF; IF((Var_Flag_Inst=TRUE) & (Var_Flag=FALSE))THEN

((Var_Flag_Inst=TRUE) & (Var_Flag=FALSE))THEN
(*Evolution command of Si

(*Execution command of SP_SFCSCOMR instruction*) SP_SFCSCOMR(TRUE, 1, D0, 2, D1, M1);

END_IF;

10.1.2 SFCTCOMR instruction

S_SFCTCOMR

High performance Process Redundant Universal

S(P)_SFCTCOMR

P: Executing condition :

			indicates	s any of the following
Structured la	oddor/EDI	CT CT	instructions.	
		D ST	S_SFCTCOMR	SP_SFCTCOMR
SP_SFCT	COMR			
- EN	ENO -	ENO:= SP_SFCTCOMR (EN, n1, n2, n3, d1, d2);		
n1 n2	d1			
— n3				
Input argument	EN:	Executing condition	:Bit	
	n1:	Block No. of an SFC program that read comments or	: ANY16	
		device number where block No. is stored.		
	n2:	The device number where the number of comments to	: ANY16	
		read or the number of comments is stored.		
	n3:	The number of comments to read in a single scan or	: ANY16	
Output argument		device number where the number of comments is stored.		
Output argument	ENO: d1:	Execution result The first number of device that stores comment read.	:Bit : ANY16	
	d2:	A device that turns ON for 1 scan at completion of the	:Bit	
		instruction.		

Setting		ernal vice		J	\		7	Zn Constant	Expansion		Sequence	SFC Program		Execution Site		
data	Bit	Word	R	Bit	Word	U\G	Ζn	К, Н	SFC BLm\Sn	Others	Program	Step	Transition Condition	Block	Step	Transition Condition
n1	-	0				_		0	-				-		-	-
n2	-	0				_		0	-				-		-	-
n3	-	0				_		0	-		0		-	0	-	-
d1	-	O*1	1			_		-	-				-		-	-
d2	O*1	-				_		-	_				-		-	-
													*1: Lo	ocal devi	ce canı	not be used.

Grant Function

This function reads comments of the transition condition 1 associated with steps activated in the SFC block specified at @ with the number of comments specified at @, and stores those to the device number of after specified at @.

Caution

- For High Performance model QCPU, use the function version is B or later and the first five digits of the serial number are '07012' or higher.
- · For Process CPU and Redundant CPU, use the first five digits of the serial number are '07032' or higher.
- For Universal CPU, use the first five digits of the serial number are '12052' or higher. Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU can not be used.

/Program Example

This program reads 2 comments being activated at the SFC block No.1 when X1 is turned ON, and stores those to the storage device after D0.

(The number of comment to be read
in a single scan is also set in 2.)

[Structured ladder/FBD]

1	Var_Flag.Exe SM735 SET Change enable flag
2	·Var_Flag.Inst ·Var_Flag SP_SFCTCOMR Execution command ····································

[ST]

IF((Var Flag Exe=TRUE) & (SM735=FALSE))THEN

(*Online program change execution command*) SET(TRUE, Var_Flag); (*Online program change enable flag*)

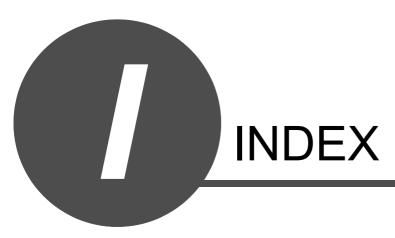
END IF;

IF((Var_Flag_Inst=TRUE) & (Var_Flag=FALSE))THEN

(*Execution command of SP SFCTCOMR instruction*) SP_SFCTCOMR(TRUE, 1, D0, 2, D1, M1);

END_IF;

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<u>WARRANTY</u>

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing onsite that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

- (1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
 1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
 - 2. Failure caused by unapproved modifications, etc., to the product by the user.
 - 3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
 - 4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
 - 5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
 - 6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
 - 7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

- (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
- (2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

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 SH(NA)-080785ENG-K(1306)KWIX

 MODEL:
 Q-KP-TM-E

 MODEL CODE:
 13JW09

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

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Specifications subject to change without notice.